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The Oregon Forest Trust: An Ecological Endowment for Posterity

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I like to think of the shadowy aisles of an untouched Oregon forest, where the sky is blotted out by the dark and over-arching roof of green and into the sky, smooth and clear and round, for one hundred, two hundred feet, rise the great solemn columns of this cathedral. I smell the balsam and feel the soft carpet of needles and of moss and look into those bluish depths where the giant trunks become almost ghostly and, behind that veil, it seems to me still lingers the Great Spirit of Creation. There brooding Silence shuts out the world and in these temples there is perfect rest. It seems to me that this great beauty and solemnity is perhaps as valuable as the shriek and clamor of the mill. It is a pity to have all this majesty of antiquity wholly destroyed. Man cannot restore it. It cannot be built by Nature herself in less than a thousand years, nor indeed ever, for it is never renewed the same. Nor do the Government reservations preserve this to us; they, too, are wholly utilitarian and their plan contemplates the gradual sale and destruction of these Titans. There is no spot where the primeval forest is assured from the attack of that worst of all microbes, the dollar.[1]

—Charles Erskine Scott Wood, 1908

INTRODUCTION

Nearly half of Oregon is covered in forests.[2] These forests stand as a local, regional, and global natural treasure of infinite proportions. Sustaining generations of human inhabitants since time immemorial, forestlands draw the primal reverence of reliant communities and visitors alike. They provide drinking water, fisheries, wildlife, clean air, plants and berries for nutrition and medicine, recreational opportunities, indescribable beauty, spiritual replenishment, cultural identifiers, and valuable timber for homes, furniture, and other products.[3] Scientists estimate that the ecological productivity of Oregon's coastal forests surpasses that of many tropical forests.[4] Today, these forests gain worldwide recognition as lungs of the

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1 Charles Erskine Scott Wood, *Portland's Feast of Roses*, 19 PAC. MONTHLY 623, 627 (1908).

2 *About the Oregon Forest Resources Institute*, OR. FOREST RES. INST., https://oregonforests.org/about-ofri (last visited June 26, 2022) [https://perma.cc/8SGA-NLA9].

3 As of 2015, Oregon produced 16.5% of the nation's softwood. Mike Cloughesy, *Oregon Is Number One*, OR. FOREST RES. INST. (Nov. 8, 2016), https://oregonforests.org/blog/oregon-number-one [https://perma.cc/5GYA-2ABF].

4 Thomas A. Spies et al., *The Ecological Basis of Forest Ecosystem Management in the Oregon Coast Range*, *in* FOREST AND STREAM MANAGEMENT IN THE OREGON COAST RANGE 31, 43 (Stephen D. Hobbs et al. eds., 2002).

planet—the Amazon of North America—remaining crucial to the carbon dioxide sequestration necessary to sustain life on Earth against the exigent threat of runaway planetary heating.[5]

Before European contact, tribal people fished, harvested, hunted, and gathered roots across these forests, actively managing them for millennia.[6] Tribal peoples generally treated the forests as an endowment to support future generations.[7] They planted forest gardens and managed the landscape through use of fire.[8] Their methods

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5 *Let Forests Grow*, OR. WILD, https://oregonwild.org/forests/let-forests-grow [https://perma.cc/AUS6-JJKH].

6 *See* Michael C. Blumm et al., *The World's Largest Ecosystem Management Plan: The Northwest Forest Plan after a Quarter-Century*, 52 ENV'T L. 151, 208 (2022) (explaining that the "Pacific Northwest is home to numerous . . . Tribes and Indigenous people who have actively managed what are now national forests for a millennia[]"); *see also* Thomas A. Spies et al., U.S. Forest Serv. et al., PNW-GTR-966, Synthesis of Science to Inform Land Management Within the Northwest Forest Plan Area 641 (2018) at 851 (explaining "socioecological systems that have developed with indigenous people over a millennia"); *id.* at 859 (discussing "tribal material well-being continues to depend on material from forests for food, water, medicines, [among other things]," and discussing a need for "specialized" forest management to consider "tribes and their members who have traditionally relied more heavily upon wild fish, game, and wild plant foods, [and] medicines").

7 Spies et al., *supra* note 6, at 859 (raising idea of "ecocultural community" that invokes "values that are important to indigenous peoples, such as reciprocity and relationships with past and future human generations"); *see also Member Tribe Overview*, COLUMBIA RIVER INTER-TRIBAL FISH COMM'N, https://critfc.org/member-tribes-overview/ [https://perma.cc/GHT6-ZFVP] ("[Columbia River Basin] tribes share a common understanding that their very existence depends on the respectful enjoyment of . . . vast land and water resources.").

8 *See generally* Charles F. Wilkinson, *The People Are Dancing Again: The History of the Siletz Tribe of Western Oregon* 52 (2010) (describing burning practices and stating that "Northwest Native peoples were agriculturalists as well as 'hunter-gatherers'"); Andrew Curry, *Pacific Northwest's "Forest Gardens" Were Deliberately Planted by Indigenous People*, SCIENCE (Apr. 22, 2021), https://www.science.org/content/article/pacific-northwest-s-forest-gardens-were-deliberately-planted-indigenous-people [https://perma.cc/98VQ-P624] (describing how Indigenous-created forest gardens "harbored a far more diverse mix of plants" than otherwise found in surrounding forests). *See also* Gabriel Popkin, *"Forest Gardens" Show How Native Land Stewardship Can Outdo Nature*, NAT'L GEOGRAPHIC (Apr. 23, 2021), https://www.nationalgeographic.com/environment/article/forest-gardens-show-how-native-land-stewardship-can-outdo-nature [https://perma.cc/EN8Y-29FG] (stating that the "forest gardens of the Pacific Northwest support more pollinators, more seed-eating animals and more plant species than the supposedly 'natural' conifer forests surrounding them"). For indigenous use of fire, see generally *How Indigenous Burning Shaped the Klamath's Forests for a Millennia*, SCIENCE DAILY (Mar. 15, 2022), https://www.sciencedaily.com/releases/2022/03/220315141837.htm [https://perma.cc/JGW5-VW7V]. *See also* Henry McCann, *Using Fire for Good on Tribal Land*, PUB. POL'Y INST. CAL. (Sept. 1, 2020), https://www.ppic.org/blog/using-fire-for-good-on-tribal-land/ [https://perma.cc/KT48-9CNG] (interviewing Margo Robbins, a Yurok tribal member and director of the Cultural Fire Management Council, stating that "[f]or thousands of years [the Yurok] used fire on a regular basis to maintain a healthy, productive, and balanced ecosystem").

supported a rich diversity of use and were largely replenishing and sustaining. Native management of the great Pacific salmon runs was comparable, and the region's salmon, forests, and people thrived in strong reciprocity for millennia.[9] Nature's own hand was the most destructive force, igniting forests with wildfires that sometimes proved catastrophic, yet part of a continual cycle of renewal.

When Oregon became a state in 1859, a new set of sovereign managers came upon the scene. They had no prior experience in the region, a paltry understanding of ecology, and a vastly different mindset, primarily marked by colonialist ambition and a commodified reduction of ecology. Abruptly, forest management became annihilative, singularly focused on exploiting the commercial timber with as much speed as labor and facilities would allow.[10] Over the course of a century and a half, timber barons razed ancient forest with abandon to supply mills, leaving blocks of denuded slopes that stretched as far as they eye could see—accomplishing this massive destruction with the wholesale permission of county, state, and federal government officials.

Enormous clear-cuts tore into the landscape as Oregon's towering Douglas fir forests—the timber industry's cash cow—fell to the saw. Oregon rose as a national leader in timber production at a nearly incalculable cost to the state.[11] Fragile slopes entirely barren of trees

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9 *See generally* MICHAEL C. BLUMM, PACIFIC SALMON LAW AND THE ENVIRONMENT: TREATIES, ENDANGERED SPECIES, DAM REMOVAL, CLIMATE CHANGE, AND BEYOND 27–28 (2022).

10 *See* F.D.L. Conway & G.E. Wells, *Timber in Oregon: History & Projected Trends*, OR. STATE UNIV. EXTENSION SERV. (1994) at 1 ("The timber of the West was exploited to the limit of the technology available in the early days."). The Pennsylvania Supreme Court recognized the same history of forest pillage in its seminal decision applying the public trust principle to resources in that state. As Chief Justice Castille wrote:

> It is not a historical accident that the Pennsylvania Constitution now places citizens' environmental rights on par with their political rights. Approximately three and a half centuries ago, white pine, Eastern hemlock, and mixed hardwood forests covered about 90 percent of the Commonwealth's surface of over 20 million acres. Two centuries later, the state experienced a lumber harvesting industry boom that, by 1920, had left much of Pennsylvania barren. "Loggers moved to West Virginia and to the lake states, leaving behind thousands of devastated treeless acres," abandoning sawmills and sounding the death knell for once vibrant towns. Regeneration of our forests (less the diversity of species) has taken decades.

Robinson Twp. v. Commonwealth, 83 A.3d 901, 960 (Pa. 2013) (citations omitted).

11 Lane County produced about 10%–15% of Oregon's timber. *Oregon Timber Harvest*, UNIV. OF MONT., BUREAU OF BUS. & ECON. RSCH., http://www.bber.umt.edu/fir/HarvestOR.aspx [https://perma.cc/ZEP3-HZ6K].

slid into streams below, smothering salmon redds (nests) and killing iconic salmon runs.[12] Roads punched through delicate ecosystems, breaking apart habitat used and needed by innumerable species.[13] Industry helicopters plastered the cut-over moonscapes with pesticides and herbicides in an effort to coax up a new monoculture of tree plantations, sending poisonous runoff into the drinking water supplies of communities below.[14] The timber towns of Oregon withered against the boom-and-bust corporate pillage.[15] During the 1980s, raw logs from the Pacific Northwest's ancient forests swelled Japan's wood products industry, supporting a fleet of ships coming in and out of coastal ports, while the Oregon timber economy relinquished any value-added economic opportunity that attached to the exported logs.[16] As Representative Peter DeFazio, Democrat of Oregon, once famously said, "The Northwest is basically the last colony of Japan."[17]

The voracious profit schemes decimated Oregon forests. While the aboriginal forest endowment across the Pacific Northwest is estimated to have been two-thirds of the landscape (over forty-one million acres), a 2006 analysis concluded that "approximately 72% of the original old-growth conifer forest has been lost, largely through logging and other developments,"[18] with the remainder scattered across federal, state, private, and tribal ownership. The great Pacific salmon runs have collapsed, in no small measure due to the plundering of the forest

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12 *Lawsuit Targets Logging That Kills Coho*, EARTHJUSTICE (Feb. 28, 2002), https://earthjustice.org/news/press/2002/lawsuit-targets-logging-that-kills-coho [https://perma.cc/CGP7-CRUP].

13 *See infra* notes 637–46; *infra* Section V.A.1.b.

14 *See infra* notes 647–51; *infra* Section V.A.1.c.

15 *See* Tara Rae Miner, *The State That Timber Built*, OR. HUMANITIES (Nov. 8, 2013), https://www.oregonhumanities.org/rll/magazine/here-spring-2012/the-state-that-timber-built/ [https://perma.cc/9CEP-WMUM] ("As in any boom, there was an inevitable bust," and by "December 1984, four out of five counties with the highest unemployment were timber dependent."); AL SANDINE, COOS BAY: PLUNDERTOWN, U.S.A.: COOS BAY ENTERS THE GLOBAL ECONOMY 15 (2003) ("Locals of the millworkers' union, the International Woodworkers of America, went from a one-time high of 1,800 members down to around 200 by 1981.").

16 *See generally* Timothy Egan, *Export Boom Dividing Pacific Timber Country*, N.Y. TIMES (Apr. 23, 1988), https://www.nytimes.com/1988/04/23/us/export-boom-dividing-pacific-timber-country.html [https://perma.cc/RC2P-QFUG]; ASSOCIATED PRESS, *Small Oregon Port Sends Last Load of Logs to Japan*, LEWISTON TRIB. (July 19, 2005), https://lmtribune.com/northwest/small-oregon-port-sends-last-load-of-logs-to-japan/article_c2252272-0342-52d8-877a-972c13146a52.html [https://perma.cc/38M5-VAGG].

17 *See* Egan, *supra* note 16.

18 James R. Strittholt et al., *Status of Mature and Old-Growth Forests in the Pacific Northwest*, 20 CONSERVATION BIOLOGY 363, 363–67 (2006).

ecosystems they depend on.[19] Community drinking water supplies are diminishing, many contaminated with chemicals sprayed after industrial logging.[20] The hostile timber wars of the past still simmer just below the surface as timber communities struggle to make it in a world of scarce supply.[21] Yet Oregon's leaders and agencies still approach forest management much as they have for the past century and a half—legalizing massive loss and destruction from overharvest and sporadic clear-cutting. The state still lacks a vision connected with reality and community justice.

Squaring this record of ecological wreckage with environmental law is surprisingly straightforward: *agency discretion* drives most destruction.[22] Multiple statutes on the federal and state level empower a panoply of agencies to manage forests, airsheds, waters, and wildlife. These statutes all confer enormous discretion to the agencies to decide how to carry out statutory mandates, which are often too vague by themselves to give enforceable content to aggrieved citizens. While agencies were initially assumed to be neutral and objective actors faithfully serving the public that funds and empowers them, many if not most agencies became fully captured over time by the industry interests that they were supposed to regulate—a dynamic that repeatedly results in agencies making decisions out of raw political calculation to serve their own ends, rather than the public's interest.[23] When an agency becomes captured, government officials look at the industry in a different light—as a client they must serve. Discretion

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19 *See* BLUMM, *supra* note 9, at 27–28.

20 *See, e.g.*, Tony Schick & Rob Davis, *Timber Tax Cuts Cost Oregon Towns Billions. Then Clear-Cuts Polluted Their Water and Drove Up the Price*, OREGONIAN (Dec. 31, 2020) ("In the past two decades, Oregon environmental regulators identified industrial logging as a risk to more than 170 public water systems, listing clear-cutting, road building and pesticide spraying as potential sources of contamination. . . . More than two dozen communities have had at least 40% of the forests around drinking water sources cut down in the past 20 years[.]"), https://www.oregonlive.com/environment/2020/12/timber-tax-cuts-cost-oregon-towns-billions-then-clear-cuts-polluted-their-water-and-drove-up-the-price.html [https://perma.cc/63KR-NDAS].

21 William G. Robbins, *Timber Industry*, OR. ENCYCLOPEDIA (Apr. 2023), https://www.oregonencyclopedia.org/articles/timber_industry/#.YyPu8ezMLyg [https://perma.cc/M8BG-5JD2].

22 *See* MARY CHRISTINA WOOD, NATURE'S TRUST: ENVIRONMENTAL LAW FOR A NEW AGE 19–83 (2013); *id.* at 68 ("Industry knows that discretion sets an open season to lobby officials into bending the law to their favor.").

23 *See id.* at 81–83 ("The politics of discretion allows power and influence to enter agency portals . . . . This intrusion moves agencies to manipulate the law to industry's advantage."); *see also* Mary Christina Wood, *Nature's Trust: Protecting an Ecological Endowment for Posterity*, 52 ENV'T L. 749 (2022).

then becomes the legal conduit through which the agency delivers public resources into corporate hands through permits, regulations, and contracts. Perhaps no industry in Oregon rivals that of the timber industry in power and influence over government.[24] It should come as little wonder that the U.S. Forest Service, Bureau of Land Management (BLM), Oregon Department of Forestry, Department of Environmental Quality (DEQ), State Land Board, county commissioners, and multiple other government actors have used their statutory authority to authorize exactly the devastation that the statutes were all designed to prevent. Their vast politicized discretion lies at the crux of this administrative syndrome.

The purpose of this Article is to provide a different frame—one organized around the public trust principle—by which to hold government accountable for the protection of Oregon's invaluable forestlands. The public trust principle is an ancient doctrine with roots going back to Roman Law. Recognized in every state in this country and in many nations abroad, the principle requires sovereigns to manage crucial natural resources (known as the "*res*" of the trust) as a sustaining endowment for the benefit of present and future generations.[25] It designates the government as a trustee of natural resources, including air, streams, wildlife, the sea, and seashores—indeed all resources of "public concern"—with a strict fiduciary responsibility to protect them for all citizens throughout time.[26] The trust remains the primary legal mechanism to carry out the Constitution's promise to "secure the Blessings of Liberty to ourselves and our *Posterity*"[27]—that is, our descendants. President Roosevelt invoked the trust principle when he said, "Our duty to the whole, including the unborn generations, begs us to restrain an unprincipled present-day minority from wasting the heritage of these unborn generations."[28] The public trust governs for the endurance, rather than the expiration, of the nation.

The principle is so fundamental that scholars have called it "the law's DNA."[29] However, although it has existed in the American legal

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24 *See, e.g.*, Schick & Davis, *supra* note 20 (EPA citing "extremely influential" Oregon timber industry).

25 MICHAEL C. BLUMM & MARY CHRISTINA WOOD, THE PUBLIC TRUST DOCTRINE IN ENVIRONMENTAL AND NATURAL RESOURCES LAW 3–4 (3d ed. 2021).

26 *See infra* notes 456–73; *infra* Section IV.A.

27 U.S. CONST. PMBL. (emphasis added).

28 THEODORE ROOSEVELT, A BOOK-LOVER'S HOLIDAYS IN THE OPEN 300 (1916).

29 *See* Gerald Torres & Nathan Bellinger, *The Public Trust: The Law's DNA*, 4 WAKE FOREST J.L. & POL'Y 281 (2014).

system since the nation's beginning, the doctrine has slipped into legal dormancy, buried by an avalanche of modern environmental regulations. Most agency regulators and government land managers have never heard of the public trust and remain unaware of their fiduciary obligations to protect public ecological assets. Today, lawyers, citizens, judges, and regulators are unearthing these principles and applying them to environmental controversies that have only worsened during the period of modern statutory law. Those trust principles *still exist in the law*, to bring accountability to environmentally ruinous regimes.

In his seminal article on the public trust principle, Professor Joseph Sax observed, "Of all the concepts known to American law, only the public trust doctrine seems to have the breadth and substantive content which might make it useful as a tool of general application for citizens seeking to develop a comprehensive legal approach to resource management problems."[30] While the public trust does not dislodge the body of statutory law, it holds the statutes and decisions implementing them to a standard of scrutiny requiring protection of public ecological rights—and provides a basis for judicial intervention when government actors use their discretion to violate those rights. As a paradigm, it provides a "macro" approach to the forests of Oregon, consolidating all forest landscapes into a conceptual framework that lifts the analysis above the fractures of ownership and statutory silos, allowing a long-term perspective beyond the short-term conflicts and complexity. The public trust manifests as an inalienable right of citizens against their government, grounding their expectations of leaders in democratic understandings while legitimizing arguments for true accountability. The trust analysis defines in fuller measure the wealth that forests confer to society—recognizing value well beyond commercial commodities as encompassing the natural, ecological, synergistic, and intangible cultural/spiritual dimensions as well.

It should come as no surprise that courts of other nations have applied the trust to compel forest protection, and some states within the United States apply the trust to all natural resources.[31] The principle

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30 Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 474 (1970).

31 *See, e.g.*, HAW. CONST. art. XI, § 1 ("For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air, minerals and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their

announced in a multitude of public trust cases carries an ancient logic that finds as compelling application in Oregon as in the Amazon Forest of South America, the island rainforests of the Philippines, and the forests of Hungary and Pakistan. The principle considers crucial natural resources, wherever located, as public trust property rightfully belonging to the public as an inalienable right.[32] Government must protect such resources for the endurance of society and not promote their destruction for the singular profit of private entities.

The public trust finds specific elaboration through a set of fiduciary standards that form a paradigm of sustainable management on behalf of the public. These time-tested standards define proper management of all ecological bounty, including forest, and provide measures of fiduciary performance against which the citizen beneficiaries may judge their political leaders and hold them accountable. Useful well beyond the courtroom, public trust principles can ground an agency's management decision, provide a guidepost for a legislative vote, validate a community's demand for resource protection—and inspire citizens to stand in a hearing and speak for the trees.[33]

This Article applies the public trust principle to Oregon forests. On one hand, it seems all too painfully obvious to argue at this moment in time for protecting and managing Oregon's forests as an endowment. The world, after all, stands at the brink of climate tipping points that threaten to send the entire planet into runaway heating,[34] and it is well understood that Oregon forests are key to the carbon sequestration needed to regain atmospheric balance.[35] Moreover, the priceless value of intact, mature, and ancient forests to present and future citizens of Oregon makes the logic of protection self-evident. On the other hand, the entire history of Oregon forest management, and many indications of future management, fly in the face of such logic. Oregon leaders and private timber corporations set on "liquidating" the forest have

conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people."); PA. CONST. art. I, § 27 ("The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.").

32 *See* WOOD, *supra* note 22, at 125.

33 *Cf.* DR. SUESS, THE LORAX (1971) ("Unless someone like you cares a whole awful lot, nothing is going to get better. It's not.").

34 *See infra* note 50 and accompanying discussion.

35 *See infra* Section V.A.3.

succeeded in nearly bankrupting it.[36] The clear blame does not fall on one person alone. Rather, it is the product of a cultural, economic, and political view of seeing the forests primarily as a marketable commodity. The reductionist view that equates forests with primarily timber legitimizes a ravage of vast proportions. Instead, the public might rightfully deem these natural resources as commonwealth in which citizens have an enduring property interest exercised through their sovereign trustees—no matter where the forests are located or who owns them.[37] On the premise that sovereign obligations should not be defined by their persistent violations, this Article explores the full slate of fiduciary principles pertinent to public and private forest management. In doing so, it offers an entire paradigm shift: Oregon's forests, collectively the Oregon Forest Trust, are to be sustained as an ecological endowment belonging to the present and future generations over time.

Albert Einstein famously said, "We can't solve problems by using the same kind of thinking we used when we created them."[38] Tweaks to governing legislation, agreements between present "stakeholders," new habitat conservation plans, and narrow lawsuits will only address singular issues and not get at the basic way forests are regarded by the legal system as a whole—as a commodity or as commonwealth. The frame governing forest management makes a difference: it determines what "counts as common sense."[39] Unless we make a fundamental shift in Oregon to value forests as inherited public commonwealth, the procedural strategies of forest protection may prove short-lived and inadequate against the continuing barrage of market pressures and "the worst of all microbes, the dollar." In this time when forest management in Oregon churns with legislative reforms, huge damages lawsuits, private-public agreements, new market mechanisms, global economic pressures, mega-fire threats across the landscape, and prospects of agency financial collapse, the basic endeavor of forest management cries out for principled guideposts that resonate in the hearts and minds

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36 PAUL W. HIRT, A CONSPIRACY OF OPTIMISM: MANAGEMENT OF THE NATIONAL FORESTS SINCE WORLD WAR TWO 142–43 (1996) (Crown Zellerbach forester arguing for "old growth liquidation").

37 *See* WOOD, *supra* note 22, at 125.

38 David Mielach, *'We Can't Solve Problems by Using the Same Kind of Thinking We Used When We Created Them,'* BUS. INSIDER (Apr. 19, 2012), https://www.businessinsider.com/we-cant-solve-problems-by-using-the-same-kind-of-thinking-we-used-when-we-created-them-2012-4 [https://perma.cc/TL46-5ZF5].

39 *See* GEORGE LAKOFF, DON'T THINK OF AN ELEPHANT! KNOW YOUR VALUES AND FRAME THE DEBATE (1st ed. 2004).

of Oregonians. We hope not only that this Article will serve as a widely used reference to inform principled forest management in Oregon, but that it will inspire leaders outside the state as well to forge a new—yet anciently informed—approach to forest management.

This Article first describes, in Part I, the Oregon Forest Trust, its ecological value, and its present management, largely for private profit. Part II then presents the legal framework that directs this management. Beyond tribal ownership, which does not involve the public trust,[40] Oregon forests are divided into three ownerships: federal, state, and private. This alone presents complexity, because each class of owner brings forth different legal responsibilities, rights, and regulatory restrictions against which the public trust principle must be applied; this complexity further multiplies by subclasses of legal responsibilities *within* each ownership. Part III then summarizes the public trust doctrine (PTD) as a fiduciary paradigm of ecological management, setting forth its origin and application. This discussion situates Oregon in national public trust jurisprudence by describing the recent *Chernaik v. Brown* case, a climate case brought by two young Oregonians in which the Oregon Supreme Court validated an extreme and restrictive interpretation of the PTD advanced by the State's Attorney General on behalf of state-agency defendants. The much-criticized decision seems an outlier against the broader body of public trust jurisprudence, but as the discussion explains, the *Chernaik* Court left open the possibility of an expanded interpretation in later decisions.

Part IV argues that the PTD reaches to forest protection. While the PTD traditionally applied to navigable waters and streambeds, the clear trend of modern cases leans decidedly toward expansion to other resources that are of public concern and inseparable from traditionally recognized natural assets. Part V explains the substantive and procedural duties of the sovereign trustees in the forest context. These duties form the conceptual parameters of accountability for federal agency officials (such as those in the federal BLM and U.S. Forest Service), Oregon legislators, the Governor, the State Land Board, Board of Forestry, state agency officials (including those in the Department of Forestry, Department of Fish and Wildlife, and DEQ), and County commissioners. Part VI then applies these fiduciary duties to the Oregon Forest Trust, tailoring analysis to the unique concerns posed by the varied ownership and management contexts. Part VII

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40 Tribal lands are held for the exclusive benefit of tribal citizens, not the public as a whole. *See generally* United States v. Shoshone Tribe of Indians, 304 U.S. 111, 117 (1938). Tribal lands therefore fall outside the public trust doctrine. *Id.*

offers pillar reforms for launching a new era of forest management. Finally, this Article concludes with a call to all Oregonians to bring public trust expectations and discourse into their forest advocacy.

I
OREGON'S FORESTS: SILENT AND VIBRANT CATHEDRALS SUSTAINING LIFE

A. The Endowment

Before this land was "Oregon," trees dominated much of the landscape. From the Pacific coastline to the mountains to the desert, there stood sweeping expanses of biodiverse forest.[41] Over millennia, the composition of this ecosystem has cycled through many versions—thicker canopy, thinner canopy, succession after fire, single-species dominance, and rich diversity—balancing and counterbalancing depending on the dynamics of the forest community. Oregon has the largest amount of forestland among the eleven western states of the contiguous United States, and these forests cloak more than half of the state.[42] The forests of Oregon form an incomparable ecological endowment, the very "source of our wealth and wellbeing."[43] We have long innately sensed their sacred nature—as temples and cathedrals where "still lingers the Great Spirit of Creation"[44]—but our scientific understanding of forest ecology is relatively recent. As one commentator explained, "[T]he scientific study of ancient forests was scant until the 1970s. Before then, what little study of ancient forests there was had just one objective: to find the best way to log them."[45] Today, amidst a climate emergency that would have been unfathomable a century ago, the forests are regarded as the vital lungs of our planet, absorbing the excess carbon dioxide pollution that threatens to make parts of the planet uninhabitable within the lifetimes of young people living today. The forests equally remain a steadfast linchpin to local survival by providing food, habitat, climate moderation, and clean water supplies.

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41 ELLIOT A. NORSE, ANCIENT FORESTS OF THE PACIFIC NORTHWEST 3 (1990).

42 Beverly E. Law et al., *Strategic Forest Reserves Can Protect Biodiversity in the Western United States and Mitigate Climate Change*, 2 COMMC'NS EARTH & ENV'T, 254, 4 tbl.1 (2021).

43 NORSE, *supra* note 41.

44 Wood, *supra* note 1, at 627.

45 NORSE, *supra* note 41, at 8 (also noting that the various values of ancient forests were, in 1990, "just beginning to be understood").

1. Inestimable Functions of Forests

Climate disruption steadily pummels the planet with floods, fires, droughts, mega-storms, heat waves, and sea level rise. No corner of Earth remains untouched, and Oregon now repeatedly succumbs to wildland mega-fires and heat domes delivering scorching temperatures never before experienced.[46] Scientists warn that continuing to inundate the atmosphere with greenhouse gas emissions and failing to extract the excess carbon dioxide (CO_2) that has already accumulated in the atmosphere will drive our planet into a state uninhabitable for human beings and other species.[47] As Dr. James Hansen, formerly this nation's chief climatic scientist, warns: "Our planet itself is in peril. Not simply the Earth, but the fate of all its species, including humanity."[48] This widely recognized "direct existential threat,"[49] worsening for decades, now approaches proximate climate tipping points poised to trigger

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46 *See* Isabella Grullón Paz, *Pacific Northwest Continues to Bake Beneath 'Heat Dome*,*'* N.Y. TIMES (July 22, 2021), https://www.nytimes.com/2021/06/29/us/pacific-northwest-heat-wave.html [https://perma.cc/5ESX-5YBH]; Christopher Flavelle & Henry Fountain, *In Oregon, a New Climate Menace: Fires Raging Where They Don't Usually Burn*, N.Y. TIMES (Sept. 17, 2020), https://www.nytimes.com/2020/09/12/climate/oregon-wildfires.html [https://perma.cc/L5Y6-JZK4].

47 *See generally* DAVID WALLACE-WELLS, THE UNINHABITABLE EARTH: LIFE AFTER WARMING (2019); David Wallace-Wells, *Jared Diamond: There's a 49 Percent Chance the World As We Know It Will End by 2050*, N.Y. MAG. (May 10, 2019), https://nymag.com/intelligencer/2019/05/jared-diamond-on-his-new-book-upheaval.html [https://perma.cc/MWR6-7CGT] (discussing Jared Diamond's new book, *Upheaval*); Jonathan Watts, *Human Society Under Urgent Threat From Loss of Earth's Natural Life*, GUARDIAN (May 6, 2019), https://www.theguardian.com/environment/2019/may/06/human-society-under-urgent-threat-loss-earth-natural-life-un-report [https://perma.cc/XJB7-54TH] (summarizing 2019 UN Assessment).

48 James E. Hansen, *Tell Barack Obama the Truth—The Whole Truth*, *reprinted in* Barry Brook, *Hansen to Obama Pt 1 – the Now or Never Plan*, BRAVE NEW CLIMATE (Nov. 24, 2008), https://bravenewclimate.com/2008/11/24/hansen-to-obama-pt-1-the-now-or-never-plan/ [https://perma.cc/T7L8-DFQP].

49 *See* Edith M. Lederer, *UN Chief: World Must Prevent Runaway Climate Change by 2020*, ASSOCIATED PRESS (Sept. 10, 2018), https://apnews.com/article/floods-united-nations-antonio-guterres-us-news-climate-71ab1abf44c14605bf2dda29d6b5ebcc [https://perma.cc/R2VR-9TJT] (quoting UN Chief stating that world faces a "direct existential threat" and must begin the shift from fossil fuels by 2020 to prevent "runaway climate change"); *see also* Brian Pascus, *Human Civilization Faces "Existential Risk" by 2050 According to New Australian Climate Change Report*, CBS NEWS (June 4, 2019, 5:18 PM), https://www.cbsnews.com/news/new-climate-change-report-human-civilization-at-risk-extinction-by-2050-new-australian-climate/ [https://perma.cc/RYA9-W8VR] ("'[C]limate change now represents a near- to mid-term existential threat' to human civilization." (internal citations omitted)).

runaway heating beyond our control.[50] Some of these dangerous feedbacks are already in motion, like rising temperatures causing melting permafrost, which in turn releases CO_2 and methane and further drives up global temperatures.[51] A recent scientific study harbors an ominous modeling prediction: "[H]ighly populated regions of the world will be rendered uninhabitable sooner than previously thought for parts of each year."[52]

This climate emergency requires an urgent global response, and time is running out.[53] Stabilizing the planet's climate system requires returning the atmospheric CO_2 to below 350 parts per million (ppm),

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50 *See* Stockholm Resilience Centre, *Earth at Risk of Heading Towards "Hothouse Earth" State*, SCI. DAILY (Aug. 6, 2018), https://www.sciencedaily.com/releases/2018/08/180806152040.htm [https://perma.cc/EZ4Z-RFMU] (quoting coauthor of study published in the Proceedings of the National Academy of Sciences: "These tipping elements can potentially act like a row of dominoes. Once one is pushed over, it pushes Earth towards another. It may be very difficult or impossible to stop the whole row of dominoes from tumbling over. Places on Earth will become uninhabitable if 'Hothouse Earth' becomes the reality."); Secretary-General's Remarks on Climate Change [as delivered], UNITED NATIONS (Sept. 10, 2018), https://www.un.org/sg/en/content/sg/statement/2018-09-10/secretary-generals-remarks-climate-change-delivered [https://perma.cc/F28X-E7EF] (describing climate "emergency" and warning, "We are careening towards the edge of the abyss[]"). More than ten years ago, the Ninth Circuit acknowledged that "climate change may be nonlinear, meaning that there are positive feedback mechanisms that may push global warming past a dangerous threshold (the 'tipping point')." Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1191 (9th Cir. 2008).

51 *See* Henry Fountain, *Climate Change Is Accelerating, Bringing World 'Dangerously Close' to Irreversible Change*, N.Y. TIMES (Dec. 4, 2019), https://www.nytimes.com/2019/12/04/climate/climate-change-acceleration.html?searchResultPosition=6 [https://perma.cc/S3FA-WJ3A]; Quanta Magazine & Max Kozlov, *The Arctic Has a Cloud Problem*, ATLANTIC (Feb. 27, 2021), https://www.theatlantic.com/science/archive/2021/02/arctic-has-cloud-problem/618159/ [https://perma.cc/R5QC-52YJ]. Melting ice sheets create another feedback loop, known as the albedo effect, where ice which previously reflected heat away from Earth diminishes, reflecting less. For a full discussion of tipping points, see Fred Pearce, *As Climate Change Worsens, A Cascade of Tipping Points Looms*, YALE ENV'T 360 (Dec. 5, 2019), https://e360.yale.edu/features/as-climate-changes-worsens-a-cascade-of-tipping-points-looms [https://perma.cc/84E8-3MZM].

52 Andrew Freedman & Jason Samenow, *Humidity and Heat Extremes Are on the Verge of Exceeding Limits of Human Survivability, Study Finds*, WASH. POST (May 8, 2020, 4:21 PM), https://www.washingtonpost.com/weather/2020/05/08/hot-humid-extremes-unsurvivable-global-warming/ [https://perma.cc/K9EH-3Q7F].

53 *See* Andrew Freedman, *More Than 11,000 Scientists from Around the World Declare a 'Climate Emergency'* WASH. POST (Nov. 5, 2019, 10:18 PM), https://www.washingtonpost.com/science/2019/11/05/more-than-scientists-around-world-declare-climate-emergency/ [https://perma.cc/YCM5-HX5F]; Justin Gillis, *Will Glasgow Be the Climate Breakthrough We Need?*, N.Y. TIMES (Oct. 31, 2021), https://www.nytimes.com/2021/10/31/opinion/climate-change-glasgow.html [https://perma.cc/DW9E-6RGN]; *see also* Mary Christina Wood, *"On the Eve of Destruction": Courts Confronting the Climate* Emergency, 97 IND. L.J. 239, 240–41, 246–49 (2022).

the highest safe level, but concentrations are climbing past 418 ppm.[54] Scientists emphasize the imperative of preserving forests so that they can absorb the legacy carbon dioxide already in the atmosphere. As our climate emergency intensifies, the incomparable role of forests in cleaning the sky of dangerous carbon dioxide pollution makes protecting them a foremost priority.[55]

In this global climate context, Oregon's Pacific Westside forests hold almost unparalleled importance. By the early 1990s, it became clear that "[t]he Westside's ancient forests contain very large amounts of [carbon] per unit area relative to the world's other major forest types."[56] As more recent analysis describes, "This [Pacific Northwest] region represents some of the highest carbon density forests in the world, [and] can store carbon in trees for 800 [years] or more."[57] Scientists also emphasize that some of the most valuable forests for carbon storage in Oregon (and Washington) are also characterized by low fire and drought vulnerability relative to other forests of the contiguous western states, making them a high strategic priority for protection.[58]

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54 OUR CHILDREN'S TRUST, GOVERNMENT CLIMATE AND ENERGY ACTIONS, PLANS, AND POLICIES MUST BE BASED ON A MAXIMUM TARGET OF 350 PPM ATMOSPHERIC CO_2 AND 1°C BY 2100 TO PROTECT YOUNG PEOPLE AND FUTURE GENERATIONS (2019), https://static1.squarespace.com/static/571d109b04426270152febe0/t/5cbf9b1a8165f50477f3d191/1556060958104/2019.04.11.OCTWhy350.Final.pdf [https://perma.cc/33HL-TUSC]; *see also* Nat'l Oceanic & Atmospheric Admin., *Trends in Atmospheric Carbon Dioxide*, GLOB. MONITORING LAB'Y, https://gml.noaa.gov/ccgg/trends/ (last visited July 16, 2023) [https://perma.cc/6R48-TWWT].

55 *COP26 Explained*, *UN Climate Change Conference UK 2021*, https://ukcop26.org/cop26-goals/mitigation/ [https://perma.cc/4QWN-BZYL]; *see* Rod Taylor et al., *What COP26 Means for Forests and the Climate*, WORLD RES. INST. (Nov. 12, 2021), https://www.wri.org/insights/what-cop26-means-forests-climate [https://perma.cc/2DMF-E4T3]. As one author emphasizes, the vast forest estates remain "globally important storehouses of carbon," storing more carbon than anything else but the oceans. John Meyer, *Using the Public Trust Doctrine to Ensure the National Forests Protect the Public from Climate Change*, 16 HASTINGS W.-N.W. J. ENV'T L. & POL'Y 195, 197 (2010) (quoting Union of Concerned Scientists' report discussing carbon storage value of forests).

56 R.A. Houghton, *Pacific Northwest Forests and the Global Carbon Cycle*, *in* NORSE, *supra* note 41, at 138.

57 Beverly E. Law et al., *Land Use Strategies to Mitigate Climate Change in Carbon Dense Temperate Forests*, 115 PNAS 3663, 3663 (2018); *see also* Janet Neuman, *Thinking Inside the Box: Looking for Ecosystem Services Within a Forested Watershed*, 22 J. LAND USE & ENV'T L. 173, 190 (2007) (noting that the importance of some of Oregon's coastal forests for their role in carbon sequestration and climate stabilization is "considerably greater than [their] size and location would otherwise suggest").

58 Law et al., *supra* note 42, at 2.

In addition to their vital role in recovering the atmospheric carbon cycle, forests serve as the literal wellsprings of our waterways,[59] providing sources of high quality, clean water.[60] Forests are those "natural reservoirs that absorb, store, filter and gradually release water to forest streams."[61] The majority of Oregonians draw their water from forested watersheds,[62] and several cities and towns in Oregon rely exclusively on water sources that are amidst forest.[63] Forests also supply key habitat for fish and wildlife, serve a vital role in flood prevention, and offer outstanding recreation; protecting them becomes key to biodiversity recovery and community support.[64]

2. Inseverable from the Rest of Nature

Oregon's forests remain inextricably bound to other life systems—water, soil, biodiversity, and climate. As Teddy Roosevelt proclaimed: "Each river system, from its *headwaters in the forest* to its mouth on the coast, is a single unit and should be treated as such."[65] Courts are just now beginning to incorporate ecological thinking into their legal rulings in environmental cases. As the Hawaii Supreme Court said in rejecting archaic legal common law distinctions between surface and groundwater in a leading public trust case, "'[B]oth categories represent no more than a single integrated source of water with each

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59 Recognizing this, the Forest Service "Organic Act" included "securing favorable conditions of water flows" among the handful of allowable purposes for creating national forests. Act of June 4, 1897, ch. 2, § 1, 30 Stat. 34, 34 (codified at 16 U.S.C. § 475 (2012)).

60 Jeff Behan, *Active Forest Management and Community Water: Issues and Interactions*, *in* TREES TO TAP: HOW FOREST PRACTICES AFFECT OREGON'S MUNICIPAL WATER 52 (Jon A. Souder ed., 2021) [hereinafter TREES TO TAP] ("Forested watersheds . . . produce higher quality water than any other type of surface water source area and supply drinking water to most of Oregon's community water systems.").

61 ANDY KERR, OREGON WILD: ENDANGERED FOREST WILDERNESS, 30 (2004).

62 *Id.* ("Two thirds of Oregonians get their water from surface sources and most Oregon tap water originates on federal lands, primarily national forests."). *See generally* TREES TO TAP, *supra* note 60.

63 *See, e.g.*, Tony Schick et al., *Big Money Bought Oregon's Forests. Small Timber Communities Are Paying the Price.*, OR. PUB. BROAD. (June 11, 2020, 6:00 AM), https://www.opb.org/news/article/oregon-investigation-timber-logging-forests-policy-taxes-spotted-owl/ (regarding Falls City, Oregon).

64 Law et al., *supra* note 42, at 3 ("[M]eeting preservation targets would help protect regional forest carbon, biodiversity, and surface drinking water. Establishing Strategic Forest Reserves on public lands would provide climate mitigation, biodiversity protection, and water security.").

65 THEODORE E. BURTON, PRELIMINARY REPORT OF THE INLAND WATERWAYS COMMISSION: MESSAGE FROM THE PRESIDENT OF THE UNITED STATES, TRANSMITTING A PRELIMINARY REPORT OF THE INLAND WATERWAYS COMMISSION at IV (1908) (emphasis added).

element dependent upon the other for its existence.' . . . [W]e see little sense in adhering to artificial distinctions."[66]

It is only at our peril that we treat forests as separate from the hydrologic cycle, or the carbon cycle, or any of the ecosystems they serve. As Aldo Leopold wisely admonished, "If the land mechanism as a whole is good then every part is good, whether we understand it or not . . . . To keep every cog and wheel is the first precaution of intelligent tinkering."[67] Yet the history of Oregon has repudiated the reality of integrated ecology. The forests of Oregon have been razed and fragmented without any regard to the life systems they support. The Part below provides a brief overview of this state's industrial forestry practices and the damage they have wrought. Later Parts provide more detail and evaluate the state's tolerance of these practices against the fiduciary obligations of Oregon trustees under the public trust principle.

B. Disastrous Management for Private Profit

While the influx of colonial settlers and loggers to this region in the early nineteenth century began the process of destabilizing the forests' natural equilibrium, early harvest methods were rudimentary, limiting the land swaths subject to clearing.[68] But by 1936, "the most accessible, and, for the most part, the highest quality timberlands in the Douglas fir region" had been cut over.[69] Mechanized timber production surged after World War II to meet an escalating national demand for wood products, and clear-cutting proceeded apace as saws and timber mills cashed out rich natural commonwealth into a single commodity.[70] By 1961, Oregon alone provided a quarter of the nation's softwood and

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66 *In re* Water Use Permit Applications, 9 P.3d 409, 447 (Haw. 2000).

67 ALDO LEOPOLD, *Conservation*, *in* ROUND RIVER 146–47 (Luna B. Leopold ed., 1953).

68 LARRY D. HARRIS, THE FRAGMENTED FOREST: ISLAND BIOGEOGRAPHY THEORY AND THE PRESERVATION OF BIOTIC DIVERSITY 25 (1984) (noting that "by the turn of the century only 1.6% of the Washington forest and an even smaller percentage of Oregon Forest had been logged") (citations omitted).

69 *Id.* at 26. It appears that this privately owned, high-quality, accessible timber was mostly "large old growth," as compared to the "small old growth" found on national forest lands, which "as a rule is much inferior in quality to large old-growth." *Id.* (internal citations omitted). Large old growth had its own notation in the timber mapping system of the day, and that notation's disappearance from usage on maps naturally coincided with the disappearance of the forests that it symbolized.

70 *See* HIRT, *supra* note 36, at 44.

hardwood lumber and half of its plywood,[71] and the number of older conifers in Oregon's Coast Range forests declined by 63% between 1939 and 1993.[72] While the forests could have supplied a sustainable source of timber, the prevailing management mentality did not look to the long-term. As one observer said, "Too few Oregonians ever considered forests as principal and the timber that could be had in perpetuity as the interest. Oregon not only allowed most of its forest capital to be consumed, but also ran up quite a debt on the ecological credit card."[73]

Industrial timber operations aim to convert ecologically rich ancient and mature forest into monoculture tree farms that will yield harvest about every thirty-five to forty-five years.[74] This "liquidation" of old-growth forest is propelled by the reality that forestland is limited: old-growth forest takes up space which could be used for silvicultural operations that maximize fiber growth (and industry profit).[75] The conversion process characteristically occurs in six phases[76]: roading, cutting, tree removal, "slash" burning (to prepare the land for tree crops), replanting (with selected monoculture trees), and herbicide application (to destroy competitor species).[77] Discussed in further detail later, this sequence proves ruinous to forest ecology. The initial phase of roading accounts for major deforestation; each square mile of commercial forest requires five miles of logging access roads, and

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71 OR. DEP'T OF FORESTRY, OREGON'S TIMBER HARVESTS: 1849–2004 1 (2005), https://www.oregon.gov/ODF/Documents/WorkingForests/oregonstimberharvests.pdf.

72 Rebecca S.H. Kennedy & Thomas Spies, *Forest Cover Changes in the Oregon Coast Range from 1939 to 1993*, 200 FOREST ECOLOGY & MGMT. 129, 129 (2004); *see also* CHARLES L. BOLSINGER & KAREN L. WADDELL, AREA OF OLD-GROWTH FORESTS IN CALIFORNIA, OREGON, AND WASHINGTON 2 (1993) ("Old-growth Declined by Two-Thirds in Five Decades"; "Old growth amounted to 49 percent of the total forest area in the early surveys, compared with 18 percent now."); *Old-Growth Forests*, OR. WILD (2022), https://www.oregonwild.org/forests/learn-about-oregons-forests/old-growth-forests [https://perma.cc/KZ9K-X4TJ] ("Old-growth forests once covered much of Oregon, but today less than 10 percent of our state's heritage forests remain. Much of what survives is found on US Forest Service and Bureau of Land Management lands that are still actively targeted for logging.").

73 KERR, *supra* note 61, at 36.

74 Seth Zuckerman, *Longer Rotations and Carbon*, Northwest Natural Resource Group (Dec. 8, 2021) ("[M]ost industrial owners west of the Cascades cut their evergreen forests soon after they grow to merchantable size—at 35 to 45 years old, depending on the growing conditions on the site.").

75 *See* HIRT, *supra* note 36, at xlii.

76 For a description, see NORSE, *supra* note 41, at 173.

77 *Id.* at 172–203.

about ten acres are cleared for every mile of road.[78] Unlike harvest units, roads are generally not replanted and therefore leave a lasting defacement of the landscape. These roads can send torrents of sediments to streams below, harming fish and other aquatic species and generally causing an erosion effect "*more than all other forest activities combined*."[79] Subsequent clear-cutting (or "even-aged" management), which predominates on private lands and still occurs on public lands, is highly destructive, tearing apart large swaths of ecology[80] and degrading surface waters through polluted runoff.[81] After burning to rid razed slopes of remaining slash, industry workers replant slopes with monoculture species that serve as no replacement for the complexity of a mature forest. Aerial chemical spraying follows in the aftermath of a clear-cut, blanketing landscapes with toxic chemicals designed to eradicate species, invasive and native alike.[82] The toxins deployed in this process can harm wildlife populations, water sources, and human health.[83]

Stuart Udall, the 37th U.S. Secretary of Interior, famously said, "Over the long haul of life on this planet, it is the ecologists, and not the bookkeepers of business, who are the ultimate accountants."[84]

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78 *Id.* at 173–74. *See generally* Beverly E. Law et al., *Creating Strategic Reserves to Protect Forest Carbon and Reduce Biodiversity Losses in the United States*, 11 LAND 721, 8 (2022) ("Extensive road systems are common on private and federal public lands [across the contiguous western states] and fragment large expanses of forest that are recovering from a century of high-grade logging.").

79 NORSE, *supra* note 41, at 175 (emphasis added) (citations omitted).

80 *Id.* at 162 (describing damaging effects of timber operations on biodiversity). For photos of clear-cuts, see BILL DEVALL, CLEARCUT: THE TRAGEDY OF INDUSTRIAL FORESTRY (1995).

81 *NOAA, EPA Disapprove of Oregon's Coastal Nonpoint Pollution Control Program*, NOAA (Jan. 30, 2015), ("[P]olluted runoff primarily from timber harvesting . . . has been shown to harm coastal water quality and habitat for endangered coastal salmon and trout. Silt-choked runoff from poorly managed logging sites not only destroys habitat but can kill salmon and trout fry and render headwater streams unusable for future spawning.").

82 Monica Samayoa, *Forest Pesticides Found Downstream in Coastal Oregon Waters*, OR. PUB. BROAD., (Mar. 18, 2021, 6:00 AM), https://www.opb.org/article/2021/03/17/forest-pesticides-found-downstream-in-coastal-oregon-waters/. For an in-depth examination of this process, see THE PEOPLE VS. AGENT ORANGE (Collective Eye Films 2021).

83 Rebecca Clarren, *Timberland Herbicide Spraying Sickens a Community*, HIGH COUNTRY NEWS (Nov. 10, 2014), https://www.hcn.org/issues/46.19/timberland-herbicide-spraying-sickens-a-community [https://perma.cc/T5ZX-KSH7]; *see also* Eric S. Lorenz, *Potential Health Effects of Pesticides*, PENN STATE EXTENSION (June 30, 2022), https://extension.psu.edu/potential-health-effects-of-pesticides; Polyxeni Nicolopoulou-Stamati et al., *Chemical Pesticides and Human Health: The Urgent Need for a New Concept in Agriculture*, 4 FRONTIERS PUB. HEALTH 148, 148 (2016).

84 NORSE, *supra* note 41, at 183.

Management of Oregon's forests to prioritize timber production has inflicted harm at multiple scales, from very localized damage to water supplies and soil health and stability, to global injury, polluting the atmosphere with the stored carbon of trees and unravelling habitat and biodiversity. Given scientists' clear warnings that "[w]e are in the midst of climate and biodiversity emergencies,"[85] Oregon's past forest management approach no longer suits the exigencies of our time. Increasingly imperative is a vision of forest management responsive to our daunting ecological reality. Part II below sets the context by explaining the present legal framework of Oregon forest management.

II
LEGAL CONTEXT OF MANAGEMENT: PROPERTY OWNERSHIPS AND REGULATION

Forests themselves do not know boundaries and interact with associated ecology at multiple levels—from the vast planetary atmosphere down to the small rivulet headwaters of a salmon spawning stream—without regard to political jurisdictions or ownership types. Despite this, Oregon's forests have historically been, and continue to be, subject to differing management frameworks depending on ownership (federal, state, or private). Forests in all ownership categories, with few exceptions, have been managed with timber production and associated profit as a paramount aim, often at the cost of vital ecological values.[86]

Oregon's non-tribal forests fall into two broad categories—public and private—with various subcategories under each.[87] Nearly 65% of Oregon's forestland is publicly owned (by federal, state, or local government), with the remainder in private ownership.[88] Of the publicly owned forestland in Oregon, almost 95% is federally owned, with over 75% of that federally owned forestland administered by the U.S. Forest Service; the rest is managed by the BLM and National

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[85] *See* Law et al., *supra* note 42, at 2. Both the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC) recognize that climate change and biodiversity are intertwined.

[86] As this Part explains, even public forestlands in Oregon have been cut over, though the rate of logging decreased in the late 1980s. *See infra* notes 967, 969 and accompanying text.

[87] Tribal forestlands account for 2% of forestland in Oregon but are not covered in this Article, as public trust analysis does not apply to that category. *See Oregon Forest Facts 2019–20 Edition*, OR. FOREST RES. INST., https://oregonforests.org/sites/default/files/2019-01/OFRI_2019-20_ForestFacts_WEB.pdf (last visited Aug. 19, 2022).

[88] *See id.*

Park Service.[89] Oregon's privately owned forestland falls into two main categories—industrial (60%) and nonindustrial (40%), primarily comprising small woodlots (40%).[90] Private woodlots are ecologically important beyond their proportional acreage because many not only provide last strongholds for imperiled fisheries and wildlife but also serve as linchpins for community drinking water supplies.

This Article considers the Oregon Forest Trust in its full ecological reach and assesses government's sovereign trust obligations across the various ownerships. Where government owns public forestland, these trust obligations inhere in its land management role. But where land is privately owned, trust obligations emerge in government's regulatory role; as with all private property, government must regulate it to protect the public. Agencies indulge in archaic superficiality when they focus only on their assigned jurisdictions with no regard to ecology located just over the boundary line.[91] Because multiple sovereign agencies interface in forest management, they are best thought of as co-trustees of the Oregon Forest Trust.

A. The Ownership Prerogative

Generally speaking, management decisions across all ownership classifications fall to the discretion of the landholder. As one text explains:

> Because law gives owners control over their land, the owner's preference is a strong determinant factor in the condition and use of that land. Owners diverge in their land use preferences. A forested parcel owned by the Nature Conservancy (a non-profit land trust) for the purpose of providing wildlife habitat will be managed differently than a forest owned by a timber company for the purpose of producing revenue to stockholders.[92]

In the case of public federal and state forestlands, agency discretion remains confined to some degree by explicit statutory mandates that

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89 The BLM and National Park Service together administer the remaining 25% of federally owned forestland. *See id.*

90 Privately owned forestland percentages are based on OFRI forest statistics. *See id.*

91 The National Environmental Policy Act (NEPA) recognizes this by defining "cumulative effects" to include past, present, and future actions, and by forcing consideration of the actions undertaken by other managing parties (private, federal, state) outside the jurisdictional framework of the decision-making agency. *See generally Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, U.S. EPA, OFF. FED. ACTIVITIES (1999), https://www.epa.gov/sites/default/files/2014-08/documents/cumulative.pdf.

92 JAN G. LAITOS ET AL., NATURAL RESOURCES LAW 311 (2d ed. 2006).

form the outer boundaries of decision-making. In the case of privately owned forestlands, owners' discretion is constrained by the applicable regulatory framework. This Part explores the statutory frameworks of public management agencies and then turns to the regulatory framework applicable to private forestlands.

B. Federal Lands

The federal government is a dominant landholder in Oregon, accounting for about 53% of the state's territory, the fifth highest percentage of any state in the nation.[93] Over half of this federal land is forestland managed by either the U.S. Forest Service or the BLM.[94]

1. National Forests

The U.S. Forest Service manages national forests, comprising about fourteen million acres in Oregon.[95] This forestland encompasses eleven national forests, stretching from the Rogue River-Siskiyou National Forest in Southwest Oregon to the Wallowa-Whitman National Forest in the state's northeast corner.[96]

a. History

Prior to the end of World War II, the timber industry regarded the national forests as large storehouses of cheap timber that should be kept off the market so as to sustain high prices for private timber,[97] and the Forest Service generally took a "conservative use" approach to forest management, providing a sustainable source of timber while generally protecting watersheds.[98] After WWII, industry turned to public lands

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93 Samuel Stebbins, *Here's How Much Land the Government Owns in Your State*, USA TODAY (Oct. 29, 2019), https://www.usatoday.com/story/money/2019/10/29/how-much-land-government-owns-in-every-state/40453833/ [https://perma.cc/2MTN-LZFA]. For a probing examination of public lands history, see JOHN D. LESHY, OUR COMMON GROUND: A HISTORY OF AMERICA'S PUBLIC LANDS (2021).

94 OR. FOREST RES. INST., OREGON FOREST FACTS: 2019–20 EDITION 1 (2020).

95 *Id.*

96 *Federal Forest Profiles*, OR. WILD, https://www.oregonwild.org/forests/learn-about-oregons-forests/federal-forest-profiles; *see also Find a Forest*, U.S. FOREST SERV., https://www.fs.usda.gov/ [https://perma.cc/R3FA-PCUF]. In addition, part of the Klamath National Forest lies in Oregon (but the major portion is in California), and part of the Umatilla National Forest lies in Washington (but the major portion is in Oregon).

97 *See* GERALD W. WILLIAMS, THE U.S. FOREST SERVICE IN THE PACIFIC NORTHWEST: A HISTORY 166 (2009); *see also* Blumm et al., *supra* note 6, at 158–60.

98 Blumm et al., *supra* note 6, at 158.

"to supplement heavily cutover private forest lands."[99] Forest Service practices took a radical turn: "For the next 40 years, the timber industry, Northwest lawmakers, and federal forest managers worked together in a powerful timber triangle, steadily leveling the great, biologically diverse natural forests and converting them to plantations of young Douglas fir."[100] After World War II, timber harvest from national forests increased twelve-fold over a twenty-five-year period between the early 1940s and the mid-1960s, essentially liquidating the forest resource.[101] The amount of timber harvested from national forests peaked nationally and in Oregon in 1987, with Oregon providing 35% of the harvest from national forests that year.[102]

b. Statutory and Regulatory Requirements—Westside Forests

The Multiple Use Sustained Yield Act (MUSY), the National Forest Management Act (NFMA), and the Endangered Species Act (ESA) all govern how the Forest Service manages national forests. Passed by Congress in 1960, MUSY directs the Secretary of Agriculture to manage forests pursuant to a "multiple use" mandate, which is defined in part to mean

> harmonious and coordinated management of the various resources, each with the other *without impairment of the productivity of the land*, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.[103]

Building on MUSY, Congress passed NFMA in 1976.[104] NFMA requires the Secretary of Agriculture to develop forest plans for all

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99 *See* WILLIAMS, *supra* note 97.

100 KATHY DURBIN, TREE HUGGERS: VICTORY, DEFEAT & RENEWAL IN THE NORTHWEST ANCIENT FOREST CAMPAIGN 23 (1996).

101 Miles Burnett & Charles Davis, *Getting Out the Cut: Politics and National Forest Timber Harvests, 1960–1995*, 34 ADMIN. & SOC'Y 202, 206 (2002); *see also* Blumm et al., *supra* note 6, at 161 (noting that timber sales rose 238% between 1939 and 1945 across the national forests, and quoting a Forest Service Chief who "warned that the nation was liquidating its national forests, estimating that wartime timber cutting exceeded annual growth by fifty percent").

102 *Forest Products Cut and Sold from the National Forests and Grasslands*, U.S. FOREST SERV., https://www.fs.usda.gov/forestmanagement/products/cut-sold/index.shtml [https://perma.cc/WP7A-4AFS].

103 16 U.S.C. § 531(a) (1960) (emphasis added).

104 Charles F. Wilkinson & Michael H. Anderson, *Land and Resource Planning in the National Forests*, 64 OR. L. REV. 1, 7 (1985). The then relatively recent gathering of "large amounts of data about the old-growth Douglas fir ecosystem," which "made clear that old-

national forest land.[105] Among other things, these forest plans must be based on multiple-use, sustained-yield principles and "provide for diversity of plant and animal communities."[106] NFMA also created substantive standards limiting clear-cut logging on national forest land, allowing the practice only where there was an assurance that the land would be adequately restocked within five years, and soil or watershed conditions would not be "irreversibly damaged."[107] Additionally, the standards only allow clear-cutting when it is the "optimum method . . . to meet the objectives and requirements of the relevant land management plan."[108] By their plain terms, these statutes appear to require the Forest Service to manage its lands pursuant to something akin to the "substantial impairment" public trust standard (discussed below in Section V.A.1), but the razed slopes of Oregon forestlands show that the Act failed to limit the damaging practice of clear-cutting.[109]

The ESA also plays a part in the management of National Forests. Under the ESA, federal agencies cannot take any action that would jeopardize the continued existence of a listed species or materially alter a species' "critical habitat."[110] As the number of imperiled species mount in the region, these restrictions increasingly drive management imperatives.

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growth forest ecosystems had an importance to human society and to the biosphere far in excess of their value as wood fiber," contributed to the passage of the NFMA. HARRIS, *supra* note 68, at xv–xvi.

105 16 U.S.C. § 1604(a); *see also* Wilkinson & Anderson, *supra* note 104.

106 16 U.S.C. § 1604(g)(3)(B). "The first set of Forest Service regulations [under NFMA] required that plans 'maintain viable populations of existing native and desired non-native vertebrate species.'" Holly Doremus, *Science Plays Defense: Natural Resource Management in the Bush Administration*, 32 ECOLOGY L.Q. 249, 305 n. 43 (2005) (citations omitted). The "viable populations" provision was codified at 36 C.F.R. § 219.19 (2000). The Clinton administration did away with this provision in adopting new regulations that "g[a]ve priority to ecological sustainability," and the Bush administration in turn did away with the prioritization of ecological sustainability. Doremus, *supra*, at 261, 261 n.46.

107 16 U.S.C. § 1604(g)(3)(E).

108 *Id.* § 1604(g)(3)(F). For a comprehensive examination of NFMA's standards, see Federico Cheever, *Four Failed Forest Standards: What We Can Learn from the History of the National Forest Management Act's Substantive Timber Management Policies*, 77 OR. L. REV. 601, 603 (1998).

109 *See* Cheever, *supra* note 108 ("[T]he 1976 limitations have not provided a legal basis for significantly altering Forest Service timber management practices through judicial intervention. In case after case, environmental groups have endeavored to use these apparently clear and forceful standards to modify Forest Service management and, in almost every case, they have failed.").

110 16 U.S.C. § 1536(a)(4).

In the early 1990s, legal challenges regarding the protection of the northern spotted owl led to a sweeping court injunction that halted timber harvest on twenty-four million acres of federal land west of the Cascades in the Pacific Northwest.[111] In response to the region's ongoing timber conflict, President Bill Clinton convened a summit meeting in Portland, Oregon to negotiate a lasting solution, and the process ultimately led to a federally adopted Northwest Forest Plan (NFP) in 1994. The NFP has been called "one of the most far-sighted and ambitious actions our nation has ever taken in conservation policy."[112] As one commentator summarized:

> The [NFP] shifted federal lands management from predominantly resource extraction toward an ecosystem management approach. Before the plan, logging on both private and federal lands had reduced old-growth forests substantially and would have eliminated most old growth within about four decades outside national parks, wilderness, and remote areas. The plan dramatically reduced (~80%) the amount of logging on federal lands through a combination of reserves and management.[113]

The NFP classified national forest lands into six groupings, keeping congressionally reserved allocations and administratively withdrawn areas free of logging and largely shielding riparian areas and "late-successional reserves" from logging.[114] This allocation left roughly 23% of federal forest lands—designated "matrix lands"—available for traditional timber-oriented management.[115] The NFP also included

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111 Seattle Audubon Soc'y v. Evans (SAS II), 771 F. Supp. 1081, 1083–86, 1096 (W.D. Wash. 1991), *aff'd*, 952 F.2d 297 (9th Cir. 1991); *see* Blumm et al., *supra* note 6, at 165–66 nn.70–80 and accompanying text; *see also* Thomas A. Spies et al., *Twenty-Five Years of the Northwest Forest Plan: What Have We Learned?*, 17 FRONTIERS ECOLOGY & ENV'T 511, 512 (2019).

112 Charles Wilkinson, *Land Use, Science, and Spirituality: The Search for a True and Lasting Relationship with the Land*, 21 PUB. LAND & RES. L. REV. 1, 7 (2000). A recent book written by some of the architects of the NFP provides a comprehensive history of how the plan was developed. *See* K. NORMAN JOHNSON, JERRY F. FRANKLIN & GORDON H. REEVES, THE MAKING OF THE NORTHWEST FOREST PLAN (2023). The plan initially applied to BLM's Westside forests, but in 2016, the Obama administration withdrew most BLM lands from it, in a move that "undermin[ed] the Plan's ecological integrity." *See* Blumm et al., *supra* note 6, at 154, 173 nn.130–31 and accompanying text. BLM's withdrawal from the NFP is further described *infra* Section VI.A.2.

113 Strittholt et al., *supra* note 18, at 365.

114 Blumm et al., *supra* note 6, at 173–77.

115 Teresa Rice & Jon Souder, *Pulp Friction and the Management of Oregon's State Forests*, 13 J. ENV'T L. & LITIG. 209, 221 (1998). Independent scientific review of the NFP's protection of old-growth forests called into question Forest Service claims of roughly 80% protection, instead "indicat[ing] that only about one-third of current old-growth forest is protected." Strittholt et al., *supra* note 18, at 371.

several programs to study and restore riparian areas and aquatic ecosystems, survey and create wildlife habitat buffers for rare species, and encourage nontraditional forest management.[116]

While the plan was lauded as a step in the right direction, it is not without its shortcomings and setbacks, described more in Section VI.A.2. Parts of the plan that encouraged experimentation with nontraditional forest management and required surveys for rare species and buffers around wildlife habitat were discontinued or amended during the Bush administration.[117] Moreover, as discussed below, the BLM largely withdrew from the plan.[118]

c. Statutory and Regulatory Requirements—Eastside Forests

At the same time that the NFP was in development for Westside forests in Oregon, the Forest Service was in the process of assessing its Eastside (east of the Cascades) forests, as well as grappling with a petition from the Natural Resources Defense Council (NRDC) seeking to stop logging in certain areas of Eastside national forests of Oregon and Washington.[119] NRDC's petition asserted that the Forest Service was not protecting adequate habitat for species, including marten, goshawk, and pileated woodpeckers, among others.[120] Partly in response to NRDC's petition, the Forest Service issued interim guidance in August 1993 that became known as the "Eastside Screens;" it aimed to heed guidance from a specially convened science panel to protect larger trees, as well as roadless and riparian areas.[121] Designed as an interim measure (to last between twelve and eighteen months), the Eastside Screens guidance "shift[ed] the harvest emphasis away from large fire tolerant trees . . . and towards small and medium sized fire and insect intolerant trees that had filled in the forests during the era of fire exclusion."[122] The most well-known element of the Eastside Screens is a prohibition on harvest of live trees twenty-one

116 *See* Blumm et al., *supra* note 6, at 173–81.

117 *Id.* at 178–80, 185–87.

118 *See* sources cited *supra* note 112 and accompanying text.

119 DAVID C. POWELL, EASTSIDE SCREENS CHRONOLOGY 6 (Apr. 2013 revision). NRDC's petition included 22 organizations. *Id.* https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd762175.pdf [https://perma.cc/2YZJ-P8RG].

120 *Id.*

121 *Id.* at 2. The guidance was referred to as "interim" because it was intended to be in place "until long-term standards and guidelines were produced." *Id.*

122 *Id.* at 3.

or more inches in diameter that is referred to as the "21-inch rule."[123] The Screens also encompassed riparian area and wildlife habitat protections.[124]

The 21-inch rule amounted to the "only real meaningful protections" for Eastside forests in Oregon,[125] and, as intended, largely prevented harvest of trees more than 21 inches in diameter[126] over the twenty-five-plus years since the Forest Service unveiled it. But in the waning days of the Trump administration, the Forest Service approved amendments to the Eastside Screens that did away with the 21-inch rule, changing it from a standard to a guideline that gave forest managers the discretion to cut larger trees.[127] In June 2022, conservation plaintiffs filed an lawsuit challenging this decision, alleging that the Forest Service was actively planning and authorizing harvest projects that would include harvest of big trees in violation of the former standard across hundreds of thousands of acres of Eastside forests.[128]

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123 PAUL F. HESSBURG ET AL., THE 1994 EASTSIDE SCREENS LARGE-TREE HARVEST LIMIT: REVIEW OF SCIENCE RELEVANT TO FOREST PLANNING 25 YEARS LATER 2 (2020).

124 POWELL, *supra* note 119, at 2.

125 Bradley W. Parks, *Whither Eastside Screens? New Guidelines Allow Cutting Larger Trees East of the Cascades*, OR. PUB. BROAD. (Jan. 20, 2020, 4:40 PM), https://www.opb.org/article/2021/01/21/eastside-screens-old-growth-trees/ [https://perma.cc/BX56-BVE2].

126 David J. Mildrexler et al., *Large Trees Dominate Carbon Storage in Forests East of the Cascade Crest in the United States Pacific Northwest*, 3 FRONTIERS FORESTS & GLOB. CHANGE 1, 2 (2020).

127 U.S. FOREST SERV., EXECUTIVE SUMMARY: FINAL ENVIRONMENTAL ANALYSIS AND DECISION FOR FOREST MANAGEMENT DIRECTION FOR LARGE DIAMETER TREES IN EASTERN OREGON AND SOUTHEASTERN WASHINGTON 2 (2021); Parks, *supra* note 125.

128 Complaint at 35 ¶ 159, Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL (D. Or. June 14, 2022), https://storage.courtlistener.com/recap/gov.uscourts.ord.167424/gov.uscourts.ord.167424.1.0.pdf. On August 31, 2023, Magistrate Judge Andrew Hallman concluded that the Forest Service violated NEPA by failing to prepare an EIS for its amendment of the 21-inch rule. Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL, 2023 WL 6443823, at *16 (D. Or. Aug. 31, 2023). He recommended "[a]n injunction requiring the Service to prepare an EIS." *Id.* at *18. The magistrate's recommendation will be submitted to federal district court Judge Ann Aiken. *See* Clark Mindock, *Trump-Era Rule Relaxing Old Growth Logging Ban Illegal, U.S. Judge Finds*, REUTERS (Sept. 1, 2023), https://www.reuters.com/legal/government/trump-era-rule-relaxing-old-growth-logging-ban-illegal-us-judge-finds-2023-09-01/ [https://perma.cc/WC4P-P6Y9].

2. Bureau of Land Management Lands

The NFP was groundbreaking, as it encompassed Forest Service and BLM forestlands in the same unified plan.[129] The ink was barely dry, however, when the timber industry sought to excise BLM lands from NFP coverage.[130] The Oregon and California Railroad Revested Lands (O&C Lands) make up the majority of BLM land in Western Oregon[131] and comprise a collection of checkerboard forestland stretching from outside Portland to the California border.[132] Encompassing roughly 2.1 million acres of forestland, the O&C Lands represent approximately 13% of the federally owned forestland in the state and over twice as much the acreage of Oregon's nonfederal public lands put together.[133]

a. History

Congress initially designated the O&C Lands through legislation in 1866.[134] At that time, much of the forests in southwestern Oregon that would become part of the O&C Lands consisted of trees exceeding five feet in diameter and 200 feet in height.[135] To encourage railroad construction and Western land settlement, Congress gave railroad companies federal land adjacent to their railroad rights-of-way, provided that the railroad companies sold the land to settlers in small

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129 Blumm et al., *supra* note 6, at 192 ("One of the fundamental reforms worked by the NFP was its recognition of the interconnectedness of the federal lands managed by the Forest Service and BLM." (internal citations omitted)).

130 *See* Complaint in Nw. Forest Res. Council v. Dombeck, No. 94-1031-TPJ (D.D.C. filed May 11, 1994). The May 11 filing date of this lawsuit was less than a month after the decision adopting the NFP.

131 Andy Kerr, *Western Oregon BLM Federal Public Forestlands: Introduction*, ANDY KERR'S PUB. LANDS BLOG, http://www.andykerr.net/western-oregon-blm [https://perma.cc/KC9F-V83S] (out of the 2.6 million acres of BLM land in Western Oregon, 2.1 million acres are O&C Lands).

132 *O&C Lands and Legislation*, BARK, http://bark-out.org/project/oc-lands-and-legislation/ [https://perma.cc/LZ6P-P7PM].

133 Kerr, *supra* note 131.

134 Oregon and California Railroad Act, ch. 242, Pub L. No. 39-242, 14 Stat. 239 (1866). For a probing look at O&C Lands management, see Michael C. Blumm & Tim Wigington, *The Oregon & California Railroad Grant Lands' Sordid Past, Contentious Present, and Uncertain Future: A Century of Conflict*, 40 B.C. ENV'T AFF. L. REV. 1, 8 (2013). For a detailed description of the O&C legal framework, see generally Deborah Scott & Susan Jane M. Brown, *The Oregon and California Lands Act: Revisiting the Concept of "Dominant Use*,*"* 21 J. ENV'T L. & LITIG. 259 (2006).

135 ELMO RICHARDSON, BLM'S BILLION-DOLLAR CHECKERBOARD: MANAGING THE O&C LANDS 3 (1980).

sections and for a specific price.[136] However, much of the land was fraudulently transferred from the railroads to timber companies, and when this came to light in the early 1900s, the federal government sought forfeiture of all unsold O&C Lands,[137] and Congress eventually revested any unsold lands from the railroads back to the federal government.[138] After a period of limbo, Congress passed the Oregon & California Lands Act (OCLA) in 1937, which dictated how the federal government should manage the lands.[139] Within the OCLA, the General Land Office and its successor, the BLM, managed the O&C Lands exclusively for timber for much of the twentieth century.

b. Statutory and Regulatory Requirements

The statutory framework governing BLM's Oregon forestlands brings to bear the same MUSY and ESA laws described above. But BLM manages its land under a different federal statute, the Federal Land Policy and Management Act (FLPMA), which presents a multiple use mandate, as follows:

> The term "multiple use" means the management of public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people . . . a combination of balanced and diverse resources uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources *without permanent impairment* of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.[140]

FLPMA also imposes a land use planning requirement on BLM, resulting in resource management plans (RMPs) that govern forest

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136 *History of the O&C Lands: 1866 to 1937*, ASS'N O&C COUNTIES, http://www.oandc.org/o-c-lands/history-of-o-c-lands/history-of-the-oc-lands-1866-to-1937/ [https://perma.cc/WF48-3RWH]. For a history of these grants, see Blumm & Wigington, *supra* note 134, at 6–22.

137 Blumm & Wigington, *supra* note 134, at 17.

138 *Id.* at 19.

139 43 U.S.C. § 2601.

140 43 U.S.C. § 1702(c) (1976) (emphasis added).

management on the ground.[141] The O&C Lands are also managed under the OCLA, which presents an arguably protective frame on its face, directing the Department of the Interior to cut timber on the O&C Lands "in conformity with the principal [sic] of *sustained yield* for the purpose of providing a permanent source of timber supply, *protecting watersheds*, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities."[142] Despite this clear multiple-use mandate, commentators observe that the OCLA has largely been "misinterpreted to call for dominant timber use under pressure from local counties that are heavily dependent on their share of the revenues from logging."[143] FLPMA's provisions take a subordinate role on O&C Lands due to a savings clause in the statute that makes the OCLA supreme in cases of conflict.[144] However, litigation in the late 1980s and early 1990s enjoined sales of O&C Lands in suitable spotted owl habitat and made clear that BLM's management of the O&C Lands must comply with other environmental statutes such as the ESA.[145]

Because O&C Lands occur in the range of the northern spotted owl, they were encompassed by the requirements of the NFP, resulting in a

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141 H.R. 5858, 75th Cong. § 1 (1937), *reprinted in* April Hearings on H.R. 5858 at 429. For detailed discussion, see Scott & Brown, *supra* note 134, at 311.

142 43 U.S.C. § 2601 (emphasis added).

143 Blumm et al., *supra* note 6, at 192. In *Headwaters v. BLM*, the Ninth Circuit offered a cursory and flawed interpretation of the OCLA that said that statute "establish[ed] timber production as the dominant use" over other forest values. Headwaters v. BLM, 914 F.2d 1174, 1184 (9th Cir. 1990). For discussion of *Headwaters* and the OCLA, see Scott & Brown, *supra* note 134, at 292–95, 299–311; Blumm & Wigington, *supra* note 134, at 24–26.

144 *See* Blumm et al., *supra* note 6, at 211 n.389 (citing Pub. L. No. 94579, 90 Stat. 2786, § 701 (1976)). FLPMA states in pertinent part: "Notwithstanding any provision of this Act, in the event of conflict with or inconsistency between this Act and the Acts of August 28, 1937, and May 24, 1939, insofar as they relate to management of timber resources, and disposition of revenues from lands and resources, the latter Act shall prevail." Federal Land Policy and Management Act of 1976, § 701(b), Pub. L. No. 94–579, 90 Stat. 2743, 2786 (uncodified).

145 *See* Portland Audubon Soc'y v. Lujan, 712 F. Supp. 1456, 1485, 1488–89 (D. Or. 1989), *aff'd*, 884 F.2d 1233 (9th Cir. 1989) (deciding that nothing in the OCLA authorized the BLM to exempt O&C Lands from NEPA, and, consequently, enjoining the BLM from logging suitable spotted owl habitat or making timber sales that may affect the spotted owl); Seattle Audubon Soc'y v. Lyons, 871 F. Supp. 1291, 1299–300 (W.D. Wash. 1994) (requiring the BLM to manage O&C Lands for all the values listed in the statute, not merely timber production); *see also* Blumm & Wigington, *supra* note 134, at 39 (describing litigation in the 1990s that enjoined BLM sales of O&C Land that affect spotted owl habitat); Blumm et al., *supra* note 6, at 211 n.389; Michael C. Blumm & Jonathan Lovvorn, *The Proposed Transfer of BLM Timber Lands to the State of Oregon: Environmental and Economic Questions*, 32 LAND & WATER L. REV. 353, 366–77 (1997).

sharp decrease in timber harvests on these lands.[146] An ensuing, ongoing O&C Lands legal saga involves multiple court challenges and administrative actions that present a tangled procedural history, described here only briefly. The primary issue in this long-standing legal conflict is whether the OCLA requires BLM to prioritize timber production over ecological values, a question taken up in Section VI.A.4 of this Article.

The timber industry and timber-dependent counties challenged the application of the NFP to O&C Lands in court less than a month after the issuance of the NFP.[147] One such challenge, *Northwest Forest Resource Council v. Dombeck*, resulted in a "sweetheart" settlement agreement with the Bush administration in 2003, in which the BLM agreed to revise its RMPs for districts containing O&C Lands by the end of 2008.[148] These plans had of course been revised by the NFP, so this settlement term was aimed squarely at unshackling O&C Lands from the NFP's requirements. This settlement also required, for each plan revision, consideration of "an alternative which will not create any reserves on O&C Lands except as required to avoid jeopardy under the Endangered Species Act."[149] Since the 2003 settlement, the BLM has twice developed new RMPs for its O&C Land districts. The first iteration of these plan revisions, the Western Oregon Plan Revision (WOPR), was adopted in December 2008 and would have "dramatically reduced riparian buffers and retained few protections for old-growth forests."[150] In spite of this, the timber industry filed a lawsuit alleging that the WOPR did not allow for sufficient timber harvest, while conservation organizations filed three separate suits, alleging that the plan allowed for an unsustainable level of timber

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146 *See* Blumm & Wigington, *supra* note 134, at 5 n.26 (citation omitted) (stating that the NFP anticipated a 70% decline in timber harvest).

147 *See* Kerr, *supra* note 131 (citing Complaint in Nw. Forest Res. Council v. Dombeck, No. 94-1031-TPJ (D.D.C. filed May 11, 1994)).

148 Order and Final Judgment at 11 § 3.5, Am. Forest Res. Council v. Clarke, No. 94-1031-TPJ (D.D.C. filed Oct. 17, 2003) (stating, "All plan revisions shall be consistent with the O&C Act as interpreted by the 9th Circuit Court of Appeals"). The case was originally filed in 1994 *sub nom. Northwest Forest Resource Council v. Dombeck*; by the time of the settlement in 2003, the lead plaintiff had changed its name, and defendant BLM had a different director, hence the different case name. For further discussion of this settlement, see Michael C. Blumm, *The Bush Administration's Sweetheart Settlement Policy: A Trojan Horse Strategy for Advancing Commodity Production on Public Lands*, 34 ENV'T L. REP. NEWS & ANALYSIS 10397, 10413–14 (2004).

149 Order and Final Judgment in Am. Forest Res. Council v. Clarke at 11 § 3.5, No. 94-1031-TPJ (D.D.C. filed Oct. 17, 2003).

150 Blumm et al., *supra* note 6, at 193.

harvest and that the BLM's plan revisions violated the ESA by failing to engage in the Act's consultation requirements.[151] The Obama administration, which had come into office since the issuance of the WOPR, withdrew it in July 2009 (reinstating the NFP's coverage of BLM's O&C Lands), citing "legal error" due to the BLM's failure to engage in ESA consultation.[152] Timber interests filed suit in federal district court in D.C. over the withdrawal of the WOPR, and the district court ruled in their favor in March 2011, and reinstated the WOPR by vacating its withdrawal.[153] A little over a year later, the federal district court in Oregon vacated the WOPR due to BLM's failure to engage in ESA consultation (once again reinstating the NFP's coverage of BLM's O&C Lands).[154]

In March 2012 (toward the end of this period of legal seesawing between NFP and WOPR coverage on BLM's O&C Lands) the Obama administration announced its intent to embark on a new RMP revision process,[155] which would result in the August 2016 adoption[156] of what was dubbed "WOPR Jr." Once again it removed BLM's O&C Lands from NFP coverage. WOPR Jr. called for an increase in the annual harvest level and slashed riparian buffers in half.[157] The plan would also lead to the construction of more than 400 miles of new roads on western Oregon BLM lands and 90,000 acres of clear-cut-style logging within the plan's first ten years.[158]

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151 *Id.* at 194.

152 *See* Douglas Timber Operators v. Salazar, 774 F. Supp. 2d 245, 247 (D.D.C. 2011).

153 *See id.* at 245.

154 *See* Complaint at 25 ¶ 57, Am. Forest Res. Council v. Kornz, No. 1:16-cv-01599-RJL (D.D.C. 2016) ("The Oregon district court entered an order on May 16, 2012, vacating the WOPR RODs and reinstating the 1995 RMPs.").

155 *See generally* Notice of Intent to Revise Resource Management Plans and an Associated Environmental Impact Statement for Six Western Oregon Districts of the Bureau of Land Management, 77 Fed. Reg. 14,414 (Mar. 9, 2012).

156 *See generally* U.S. DEP'T OF THE INTERIOR BLM (Aug. 2016), *Northwestern & Coastal Oregon Record of Decision and Resource Management Plan*, https://eplanning.blm.gov/public_projects/lup/57902/79046/91311/NCO_ROD_RMP_ePlanning.pdf [https://perma.cc/E8WU-J7PU]. For discussion, see Blumm et al., *supra* note 6, at 194; *see also BLM Plan Revisions*, OR. WILD, https://oregonwild.org/blm-plan-revisions [https://perma.cc/SRL5-JEE7].

157 Dylan Darling, *Forest Plan Pleases Nobody*, EUGENE REG. GUARD (Apr. 13, 2016), https://www.registerguard.com/story/news/2016/04/13/forest-plan-pleases-nobody/11671738007/ [https://perma.cc/24ZY-FQEB]; *see also infra* note 966 and accompanying text.

158 *The 2016 Bureau of Land Management (BLM) Proposed Final Resource Management Plan for Western Oregon: A Conservation-Based Summary*, OR. WILD, http://www.oregonwild.org/sites/default/files/pdf-files/blm_prmp_talking_points_4.16.pdf [https://perma.cc/E58Z-799D].

Timber companies have pushed for the BLM to be more aggressive, arguing that the OCLA requires the BLM to log even more than WOPR Jr. allows. They were initially successful in a case challenging WOPR Jr. that was filed in the D.C. District Court on the same day that BLM adopted WOPR Jr.[159] In 2019, Judge Richard Leon issued an opinion holding that the OCLA requires BLM to manage all 2.1 million acres of O&C Land under its jurisdiction for timber production.[160] The BLM argued against this interpretation, stating that the BLM is required to comply with the ESA in addition to the OCLA in the management of its O&C Lands, and that the agency has discretion in how to satisfy these obligations.[161] Judge Leon's 2019 opinion did not provide a remedy, instead ordering briefing from the parties on the matter.[162] Judge Leon subsequently issued a remedy ruling in 2021, vacating the 2016 WOPR Jr. (but staying that vacatur "until defendants develop and implement revised RMPs"), maintaining the premise that the plan violated the OCLA by not logging enough.[163] The D.C. Circuit reversed Judge Leon in July of 2023, finding that the 2016 WOPR Jr. was "a permissible exercise of the Secretary's discretion under the O & C Act," and that the WOPR Jr. "reasonably harmonize[s] the Secretary's O & C Act duties with her obligations under two other statutes—the ESA and the CWA."[164]

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159 *See* Complaint at 25 ¶ 57, *Kornz*, No. 1:16-cv-01599-RJL.

160 Am. Forest Res. Council v. Hammond, 422 F. Supp. 3d 184, 191 (D.D.C. 2019) ("This Court must, therefore, conclude that the 2016 RMPs violate the O&C Act by setting aside timberland in reserves where the land is not managed for permanent forest production and the timber is not sold, cut, and removed in conformity with the principle of sustained yield."); *see also Counties Score Double Victory in O&C Lands Litigation*, AOCC, http://www.oandc.org/counties-score-double-victory-in-oc-lands-litigation/ [https://perma.cc/D35L-JCMG]. *Hammond* falls in step with an earlier case, Headwaters, Inc. v. BLM, 914 F.2d 1174 (9th Cir. 1990), in which an environmental group (Headwaters) challenged BLM timber management of O&C Lands. There, the Ninth Circuit ruled that the OCLA set forth timber production as a dominant use. The *Hammond* case is one of multiple rulings by Judge Leon that interpreted the OCLA as requiring timber production. *See* Swanson Grp. Mfg. LLC v. Bernhardt, 417 F. Supp. 3d 22 (D.D.C. 2019) (finding BLM violated the OCLA's timber sale mandate); Am. Forest Res. Council v. Nedd, No. CV 15-01419 (RJL), 2021 WL 6692032 (D.D.C. Nov. 19, 2021) (vacating the 2016 RMPs but staying the vacatur). These cases are discussed in *infra* notes 979–80 and accompanying text.

161 Federal Defendants' Reply Memorandum in Support of Cross Motion for Summary Judgment [Refiled], *Hammond*, No. 1:16-cv-01599-RJL (July 22, 2019).

162 *Hammond*, 422 F. Supp. 3d at 193–94.

163 Am. Forest Res. Council v. Nedd, Nos. 16-01599, 16-01602, 15-01419, 2021 WL 6692032 at *6 (D.D.C. Nov. 19, 2021) (ordering BLM to develop and implement a revised RMP consistent with the OCLA); *appeal docketed*, Swanson Grp. Mfg. LLC v. Haaland, No. 22-5019 (D.D.C. Jan. 25, 2022).

164 Am. Forest Res. Council v. United States, 77 F.4th 787, 802 (D.C. Cir. 2023).

C. State Forest Land

The Oregon Department of Forestry manages over 745,000 acres of state-owned forestland across the state of Oregon, with over 95% of this acreage classified as "Board of Forestry Lands," and the remainder classified as "Common School Forest Lands.[165] Notably, over 70% of these state-owned forestlands are located in the Coast Range ecosystem in the Clatsop State Forest and the Tillamook State Forest[166]—an area described by scientists as "among the most productive forest ecosystems in the world,"[167] with productivity "higher than . . . many tropical forests."[168]

1. Board of Forestry Lands

Oregon's Board of Forestry[169] owns 712,639 acres of forestland that is in turn managed by the Oregon Department of Forestry's State Forests Division.[170] The genesis of Board of Forestry owned acreage dates to the 1900–1940 period, when various dynamics laid the foundation for the virtual abandonment of millions of acres of "cut-over and burned-over land"[171]—on the part of "speculators, land fraud syndicates and hopeful, but unrealistic, settlers."[172] The widespread abandonment of these forestlands—ultimately over 1.1 million acres—burdened counties with significant property tax delinquencies.[173] After a decade of debate in the 1930s over what to do with these lands,[174] the

165 *Lands Managed by the State Forests Division*, OR. DEP'T FORESTRY (May 3, 2019), https://www.oregon.gov/odf/working/documents/StateForestsLandsMap.pdf [https://perma.cc/6BYD-YNFS].

166 OR. DEP'T OF FORESTRY, NORTHWEST OREGON STATE FORESTS MANAGEMENT REVISED PLAN APRIL 2010 2-52 tbls.2–4 (2010), https://www.oregon.gov/odf/Documents/aboutodf/2010FMPNorthwestOregon.pdf [https://perma.cc/7EWU-NZQM].

167 Spies et al., *supra* note 4, at 43.

168 *Id.* at 44.

169 The State Board of Forestry is made up of seven members appointed by the Governor and confirmed by the Oregon State Senate. OR. REV. STAT. § 526.009(1). The Board is tasked with "supervis[ing] all matters of forest policy and management under the jurisdiction of th[e] state." *Id.* § 526.016(1).

170 *Lands Managed by the State Forests Division*, OR. DEP'T OF FORESTRY (May 3, 2019), https://www.oregon.gov/odf/working/documents/StateForestsLandsMap.pdf [https://perma.cc/JHX7-HQBJ].

171 CHARLES LANDMAN, OREGON BOARD OF FORESTRY LANDS: AN HISTORICAL OVERVIEW OF THE ESTABLISHMENT OF STATE FOREST LANDS 2–3 (1995).

172 *Id.* at 3.

173 *See id.* at 13–14; *id.* at 36 n.94 (citing BIENNIAL REPORT OF THE STATE FORESTER OF THE STATE OF OREGON 21 (1939–40)).

174 *See generally id.* at 14–18 ("State Acquisition of Abandoned Lands: A Decade of Debate.").

legislature passed laws culminating in the enactment of the Acquisition Act in 1939.[175] This Act allowed the Board of Forestry to acquire from counties lands "chiefly valuable for the production of forest crops, watershed protection and development, erosion control, grazing, recreation or forest administration."[176] The 1939 Act and its subsequent amendments resulted in a state forest system amounting to 640,000 acres by 1952.[177]

Forestlands acquired by the Board of Forestry pursuant to the 1939 Acquisition Act and its subsequent iterations must, by the explicit statutory terms, be "manage[d] . . . so as to secure the *greatest permanent value* of those lands to the state,"[178] and up to 75%[179] of revenues derived from these lands "shall be credited to the county in which the lands are situated."[180] The Oregon Department of Forestry defines "greatest permanent value" as meaning "healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon."[181] The Department lists "benefits" referred to in this definition as including (but not limited to) the following:

> a) Sustainable and predictable production of forest products that generate revenues for the benefit of the state, counties, and local taxing districts;
>
> b) Properly functioning aquatic habitats for salmonids, and other native fish and aquatic life;
>
> c) Habitats for native wildlife;
>
> d) Productive soil, and clean air and water;
>
> e) Protection against floods and erosion; and
>
> f) Recreation.[182]

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175 *Id.* at 18–25 (citing 1939 Or. Laws ch. 478, § 1). The 1939 Acquisition Act was a new iteration of a previous such act, *id.* at 18, with the first such act having been enacted in 1925. *Id.* at 12 (citing 1925 Or. Laws, ch. 115).

176 *Id.* at 18 (quoting 1939 Or. Laws, ch. 478, § 1).

177 *Id.* at 25 (citing BIENNIAL REPORT OF THE STATE FORESTER OF THE STATE OF OREGON 63 (1950–52)).

178 OR. REV. STAT. § 530.050 (emphasis added).

179 *Id.* § 530.110(1)(b).

180 *Id.* § 530.115(1).

181 OR. ADMIN. R. 629-035-0020(1).

182 OR. ADMIN. R. 629-035-0020(1)(a)–(f).

The meaning of "greatest permanent value" in the Board of Forestry lands context was at the center of a recent court case, *Linn County v. Oregon*, brought by counties holding Board of Forestry lands within their borders against the state of Oregon. Linn County initiated the class action lawsuit against the state of Oregon and the Department of Forestry in 2016, seeking over $1 billion in damages and alleging that the state was in breach of contract "by failing to manage the forestlands so as to maximize revenue."[183] At the trial court level, a jury awarded the plaintiffs over $1 billion in damages,[184] but the Oregon Court of Appeals reversed the trial court in 2022. In doing so, the Court of Appeals noted that "'greatest permanent value' has myriad definitions, some of which could relate to revenue production and others that do not relate to revenue production";[185] that the state (and not the counties) is "the entity that the Board [of Forestry] is directed to look to in securing the 'greatest permanent value,'"[186] and that "reading in a contractual obligation to maximize revenue" would run afoul of legislative direction "not to insert what has been omitted" when constructing statutes.[187] The Oregon Supreme Court denied review of the Oregon Court of Appeals's decision in September 2022, leaving the interpretation to stand.[188]

2. Common School Forest Lands/The Elliott State [Research] Forest

As noted above, over 95% of the state-owned forestlands managed by the Oregon Department of Forestry consist of Board of Forestry Lands, with the remaining acreage (32,598 acres) consisting of Common School Forest Lands.[189] Common School Lands were granted by Congress to Oregon upon admission to the Union in 1859[190] and are administered by the State Land Board (comprised of the Governor, Secretary of State, and the State Treasurer).[191] The Oregon Constitution requires the Board to manage those lands "with the object

183 Cnty. of Linn v. State, 510 P.3d 962, 964 (Or. Ct. App. 2022), *rev denied*, 516 P.3d 1177 (Or. 2022).

184 *Id.*

185 *Id.* at 975.

186 *Id.* at 973.

187 *Id.* at 976–77 (quoting OR. REV. STAT. § 174.010).

188 *Cnty. of Linn*, 516 P.3d 1177.

189 *See Lands Managed by the State Forests Division*, OR. DEP'T OF FORESTRY (2019), https://www.oregon.gov/odf/working/documents/StateForestsLandsMap.pdf [https://perma.cc/2PVV-HP5L].

190 Cascadia Wildlands v. Dep't of State Lands, 452 P.3d 938, 939–40 (Or. 2019).

191 OR. CONST. art. VIII, § 5(1).

of obtaining the greatest benefit for the people of this state, consistent with the conservation of this resource under sound techniques of land management."[192]

In addition to the Common School Lands, the State Land Board also owns over 80,000 acres of land within the Elliott State Forest that had a different transactional history but became dedicated as Common School Land.[193] The Elliott is located south of Devil's Staircase Wilderness and the Umpqua River and north of Weyerhaeuser's Millicoma Tree Farm.[194] Although relatively modest in acreage, the Elliott has paramount ecological value and has been included in a strategy by leading scientists to establish forest reserves in Oregon.[195] Its unique history has bearing on today's management. The bulk of Elliott State Forest lands trace their roots to a 1927 transfer of 70,000 acres of Siuslaw National Forest to the state via presidential proclamation.[196]

The Elliott's Common School Lands generated revenue for the common school fund through timber sales until 2013, when "the cost of managing the Elliott State Forest [began to exceed] revenue."[197] This marked change occurred in the wake of a federal ESA case against the state alleging logging-related "take" of threatened marbled murrelets.[198] In *Cascadia Wildlands v. Kitzhaber*, the U.S. District Court for the District of Oregon enjoined logging of eleven timber sales within the Tillamook and Elliott State Forests[199] as well as any logging

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192 *Id.* § 5(2).

193 *See* OSU COLLEGE OF FORESTRY, ELLIOTT STATE RESEARCH FOREST PROPOSAL 29 (2021), https://www.forestry.oregonstate.edu/sites/default/files/041421_esrf_proposal.pdf [https://perma.cc/MJL6-8SKU].

194 For discussion of Weyerhaeuser's Millicoma Tree Farm, see *infra* Section II.D.1.a.

195 Beverly E. Law et al., *Strategic Reserves in Oregon's Forests for Biodiversity, Water, and Carbon to Mitigate and Adapt to Climate Change*, FRONTIERS, 13 (2022).

196 *See* Cascadia Wildlands v. Dep't of State Lands, 452 P.3d 938, 941 (Or. 2019) ("Those 70,000 acres were partly in exchange for certain common school lands that had been transferred to the state at the time of admission, and partly comprised land granted to the state in lieu of common school lands that were unavailable at the time of statehood.").

197 *Id.*

198 Cascadia Wildlands v. Kitzhaber, 911 F. Supp. 2d 1075, 1078 (2012); *see also* Cascadia Wildlands v. Scott Timber Co., No. 6:16-CV-01710-AA, 2022 WL 3017684, at *10–*11 (D. Or. July 29, 2022) ("One of the greatest threats to murrelets is forest fragmentation. . . . On nonfederal lands in Oregon between 1993 and 2012, 98% of loss to murrelet habitat was attributable to timber harvest, most of which occurred in the Coast Range.").

199 Cascadia Wildlands v. Kitzhaber, No. 3:12-CV-00961-AA, 2012 WL 5914255, at *1 (D. Or. Nov. 19, 2012).

activities in known occupied marbled murrelet sites in the Tillamook, Clatsop, and Elliott State Forests.[200]

In the wake of the logging restrictions resulting from *Cascadia Wildlands*, the state in 2014 sold portions of the Elliott State Forest's Common School Lands to private timber companies.[201] One of these sales was subsequently invalidated by the Oregon Supreme Court for violating a 1957 statutory provision[202] that withdrew the Elliott's former Siuslaw National Forest lands from sale.[203] Forty-nine acres of another of these 2014 sales were slated for clear-cut logging; however, the U.S. District Court for the District of Oregon found the proposed logging in violation of the ESA insofar as it would "harm by significant[ly] impairing, through the destruction and degradation of occupied murrelet habitat, [murrelets'] essential behavioral patterns—*causing the murrelets ability to nest and engage essential breeding activities to cease there for 100 years or more*."[204]

The year after the aforementioned sales of Elliott State Forest tracts to private timber companies, the State Land Board in 2015 (at that time composed of Governor Kate Brown, Secretary of State Jeanne Atkins, and Treasurer Ted Wheeler) voted unanimously in favor of selling the entire Elliott State Forest to private interests.[205] In February 2017, the Board (then composed of Governor Brown, Secretary of State Dennis Richardson, and Treasurer Tobias Read) voted 2–1 in favor of moving forward with selling the forest to Lone Rock Timber Company (which had partnered with the Cow Creek Band of Umpqua Tribe of Indians), with Governor Brown as the lone vote against moving forward with the sale.[206] Then, in May 2017, the State Land Board reversed course on

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200 *Id.* at 2.

201 *See, e.g.*, *Cascadia Wildlands*, 452 P.3d at 941–42 (contesting the sale of East Hakki Ridge parcel to Seneca Jones Timber Company, LLC); *Scott Timber*, 2022 WL 3017684, at *2 (contesting the sale of Benson Ridge Tract to Scott Timber Co., Roseburg Resources Co., and RLC Industries Co.).

202 OR. REV. STAT. § 530.450 ("Any lands in the national forests on February 25, 1913, selected by, and patented to, the State of Oregon, for the purpose of establishing a state forest, hereby are withdrawn from sale.").

203 *Cascadia Wildlands*, 452 P.3d at 947 ("Conclud[ing] that ORS 530.450 is not unconstitutional and is not void" and affirming the Oregon Court of Appeals.).

204 *Scott Timber*, 2022 WL 3017684 at *23 (emphasis added).

205 State Land Board Meeting Minutes (Aug. 13, 2015), https://www.oregon.gov/dsl/Board/Documents/slb_aug2015_minutes.pdf [https://perma.cc/CZ7H-HZXR].

206 State Land Board Meeting Minutes (Feb. 14, 2017), https://www.oregon.gov/dsl/Board/Documents/slb_feb2017_minutes.pdf [https://perma.cc/J7LF-TN3W]; Zach Urness, *Land Board Votes to Sell Elliott State Forest, but Decision Not Final*, STATESMAN J. (Mar. 13, 2017), https://www.statesmanjournal.com/story/news/2017/02/14/land-board-votes-sell-elliott-state-forest-but-decision-not-final/97909298/ [https://perma.cc/BXA2-YELK].

selling the forest to Lone Rock (and the Tribe), setting the stage for the eventual passage of Senate Bill 1546 by the Oregon Legislature in 2022.[207] As discussed below, Senate Bill 1546 was aimed at transforming the Elliott State Forest into the Elliott State *Research* Forest to be managed by Oregon State University (OSU).

The Elliott State Research Forest legislation was an outgrowth of an OSU College of Forestry proposal to place the forest under its control to be managed as "an enduring, publicly owned, world-class research forest that [a]dvances and supports forest health, climate resilience, carbon sequestration, biodiversity, recovery of imperiled species, water quality and quantity, recreational opportunities and local economies."[208] The Elliott State Forest will be renamed the Elliott State Research Forest and will be managed in accordance with this mission starting in 2024[209] if various statutory prerequisites are met, including decoupling of the forest from the Common School Fund, issuance of a final habitat conservation plan (HCP) for the forest pursuant to the federal ESA, and State Land Board approval of a new forest management plan.[210] In terms of forest management, OSU College of Forestry's proposal envisions both conservation and harvest—described as "[a] cross-section of management strategies that represent a spectrum of operational settings from reserves and conservation-oriented thinning to more intensive management."[211] Later Parts of this Article discuss the state's fiduciary obligations with respect to the Elliott State Research Forest in this new context.

3. Federal Endangered Species Act, Habitat Conservation Plans, and Incidental Take Permits

Aside from the laws above that set forth land management principles, the federal ESA applies to federal, state, and private forestlands through section 9, which prohibits "take" of endangered

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207 *See* Jake Arnold, *State Land Board Ends Sale of Elliott State Forest; Next Move Unclear*, OR. SCH. BD. ASS'N (May 9, 2017), https://www.osba.org/News-Center/Announcements/2017-05-09_LandBoardEndsElliottForestSale.aspx [https://perma.cc/YT52-5B8C].

208 S.B. 1546 § 2(2)(a).

209 S.B. 1546 § 31(1)(a).

210 S.B. 1546 §§ 31(2)(b), 31(2)(c), 31(2)(e).

211 Oregon State University College of Forestry, *Elliott State Research Forest Proposal*, 7 (2021), https://www.forestry.oregonstate.edu/sites/default/files/041421_esrf_proposal.pdf [https://perma.cc/DM7J-Z5Q3]. The plan is discussed *infra* Section VI.B.

species, a prohibition extending to habitat destruction.[212] Because a wide array of imperiled, ESA-listed species—ranging from the northern spotted owl to the migratory salmon to the Pacific salamander—exist on Oregon forestlands, and forestry activities could cause harm to such species and/or destroy their habitat, the ESA remains a key driver of forest protection on state and private timberlands. Parties must secure an Incidental Take Permit (ITP) under section 10 of the Act to authorize harmful activities that are incidental to an otherwise lawful activity.[213] To gain such a permit, applicants must submit an HCP that, among other things, specifies actions the applicant must take to "minimize and mitigate such impacts."[214]

Such HCPs form a release valve from the ESA's otherwise strict Section 9 prohibition against harming key habitat, because they pave the way for an ITP that legalizes the destructive activity. Often, the HCP is negotiated between private parties, state agencies, conservation groups, and the relevant ESA-implementing agency (either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). Large HCPs guide activities on broad swaths of land and may have terms that extend many decades into the future. This widely used regulatory tool is presently being deployed in Oregon for ten million acres of private land[215] as well as timberland across state-owned western forests. Characteristically, these HCPs represent compromises, securing future protections across broad landscapes in exchange for providing some allowance for private landowners to take species or destroy their habitat within specified parameters.

In February 2022, the Oregon Board of Forestry released for public comment an HCP covering activities across its 640,000 acres of state-owned forestlands in the western part of Oregon.[216] Known as the Western Oregon State Forests HCP, the HCP was developed to support applications for federal ESA ITPs from the NMFS and the USFWS for seventeen federally listed species (including several species of salmon,

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212 16 U.S.C. § 1538; *see also* Babbitt v. Sweet Home, 515 U.S. 687, 708 (1995) (holding that "habitat modification or degradation that actually kills or injures wildlife" falls under activity prohibited by the ESA).

213 16 U.S.C. § 1539(a). For a general explanation of the ESA and section 10, see *The Legal Framework of the Endangered Species Act (ESA)*, CONG. RSCH. SERV. (Jun. 5, 2019), https://sgp.fas.org/crs/misc/IF11241.pdf [https://perma.cc/G347-V33E].

214 16 U.S.C. § 1539(a)(2)(A).

215 *See infra* Section VI.C.

216 *Western Oregon State Forests Habitat Conservation Plan: Public Draft*, OR. DEP'T OF FORESTRY (Feb. 2022), https://media.fisheries.noaa.gov/2022-03/wosf-hcp-feb-2022.pdf [https://perma.cc/2J5N-5SLA].

salamanders, northern spotted owl, marbled murrelet, tree vole and Coastal marten). The HCP aims to lock in forestry activities across the state lands for a seventy-year permit term.[217] Its Aquatic Conservation Strategy consists largely of establishing protected buffers along streams, while its Terrestrial Conservation Strategy consists of establishing Habitat Conservation Areas across 43% of the state's western forests. Such conservation areas will guide forest management toward actions purportedly enhancing species habitat, allowing for forestry interventions (such as thinning) that purport to serve that end.[218]

D. Private Lands

From the white bark pines that shade slopes of the Wallowa Mountains to the muted and imposing sequoias of the southern coast, private landowners claim roughly 34% of Oregon's rich and complex forestland. Owning about ten million acres in all, these private owners command a considerable role in Oregon's forest estate, which makes it imperative that the governing agencies regulate these lands in a manner that fulfills fiduciary obligations to the public beneficiaries, both present and future.[219] This Section briefly describes the framework that regulates private forests. Later, Section III.E. delves into the public trust principle's interface with private property, and Section VI.C. evaluates the regulatory framework against the fiduciary standards that Oregon sovereign trustees are bound to uphold.

1. History and Nature of Private Land Ownership

Of the approximately ten million acres of private timberland, around seven million acres are held by large owners (typically corporate entities) and managed intensively for industrial forestry in the cycle described above in Section I.B (clear-cutting, pesticide application, and herbicide spraying).[220] The remaining three million acres are held by

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217 *Id.* at ES-1.

218 *Id*. at ES-8 to -10.

219 *Who Owns the Forests?*, OR. FOREST RES. INST., https://oregonforests.org/content/forest-ownership-interactive-map [https://perma.cc/628T-JDL7].

220 *See* CONG. RSCH. SERV., U.S. FOREST OWNERSHIP AND MANAGEMENT: BACKGROUND ISSUES FOR CONGRESS 31 (Nov. 24, 2021). The report describes the approach of corporate forest owners:

> Corporate forest owners are generally profit maximizing or investment oriented. Within this ownership class, land management generally focuses on intensive

nonprofit land trusts, individuals, and small woodlot owners (often referred to as "family forestland owners") and generally managed for a variety of values, including for wildlife, water, privacy, aesthetics, recreation and timber production.[221] As described below, the corporate ownership of industrial lands vests management decisions in the hands of financial stakeholders located far from the communities that suffer the ecological and cultural impacts of their decisions.

a. Corporate Ownership of Oregon Timberlands

One cannot fully understand industrial forestry in Oregon without knowing its origins and grasping the enormous financial power timber corporations now wield as a result of their concentrated ownership and timber extraction in this state and elsewhere. These are not, for the most part, entities that trace back generations to settlers scraping a living from cutting trees on their lots. Rather, much of the present arrangement of industrial timberland ownership in Oregon has its origins in the early days of western railroad expansion. Granted tens of millions of acres by Congress to put in rail lines across the country and propelled by the manifest destiny zeitgeist, companies such as the Great Northern Railway and the Northern Pacific Railroad linked the Midwest with the "undeveloped" lands of the American West.[222] Upon completion of the various railroad lines, these corporations passed on much of the excess adjacent land they had acquired. Timber tycoons were poised to snatch up these lands, consisting of enormous tracts of virgin forest throughout the West, much in Washington and Oregon.[223]

> silvicultural techniques to maximize timber production. . . . [C]orporate owners reported frequently engaging in management activities related to timber harvesting, such as applying herbicides and fertilizers; conducting road work; and reducing insects, diseases, and invasive species.

Id. (citations omitted).

221 *Educating Forest Landowners*, OR. FOREST RES. INST., https://oregonforests.org/landowner-education [https://perma.cc/P5VV-EEXX]; *Forest Facts: Oregon's Family-Owned Forests*, OR. DEP'T FORESTRY (Feb. 2015), https://www.oregon.gov/ODF/Documents/AboutODF/SmallForestlandOwnersFactsheet.pdf#:~:text=Forest%20Facts%20OREGON%E2%80%99S%20FAMILY-OWNED%20FORESTS%20Oregon%E2%80%99s%20family-owned%20forests,of%20forest%20are%20known%20as%20family%20forestland%20owners [https://perma.cc/GZZ5-CWE2].

222 David H. Hickcox, *The Impact of the Great Northern Railway on Settlement in Northern Montana, 1880–1920*, 148 R.R. HIST. 58 (1983).

223 David Maldwyn Ellis, *Railroad Land Grant Rates, 1850–1945*, 21 J. LAND & PUB. UTIL. ECON. 207 (1945); *see also* DERRICK JENSEN, RAILROADS AND CLEARCUTS 1–4 (1995).

The singularly vast Pacific Northwest timber holdings of Weyerhaeuser Corporation warrant special mention, as some trace back to railroad grant lands, a historical context that has been a focus of land reform proposals. Prior to turning to the Northwest's unparalleled forests, Weyerhaeuser founder Frederick Weyerhaeuser's timber operations concentrated on the Great Lakes region; Weyerhaeuser and the timber industry in general in that region were described by *National Geographic* as having employed "methods so suicidal that sandy wastes of worthless brush have been substituted for what might have been well stocked young pine forest."[224] Frederick Weyerhaeuser was close friends with James J. Hill of the Northern Pacific Railroad (and even moved next door to Hill in St. Paul, Minnesota).[225] This relationship "allowed Weyerhaeuser to jump from the denuded hills of Wisconsin and Minnesota to the heavy timber of the northwest."[226] Northern Pacific had amassed around forty million acres in land grants from the U.S. government, and over ten years around the turn of the twentieth century, "Weyerhaeuser and his associates had acquired 1,945,000 acres . . . of Pacific Northwest timber; 80 percent of that came from the Northern Pacific Railroad."[227] Weyerhaeuser's acquisitions from Northern Pacific included forestland that Northern Pacific acquired from the federal government in exchange for unforested lands the railroad had gained consisting of rock and ice near Mount Rainier.[228] Accounts indicate that 320,000 of these forested acres acquired by Weyerhaeuser were located in Oregon.[229]

Subsequently, according to one chronicle, Weyerhaeuser purchased tens of thousands of additional acreage of old-growth forest in Coos

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224 CARSTEN LIEN, OLYMPIC BATTLEGROUND: THE POWER POLITICS OF TIMBER PRESERVATION 8–9 (2d ed. 2000) (quoting Herbert A. Smith, *Saving the Forest*, 18 NAT'L GEOGRAPHIC 524 (1907)).

225 *Id.* at 9.

226 *Id.*

227 *Id.* at 14.

228 *Id.* ("Within three days of passage of the Mount Rainier National Park bill, the railroad released 450,000 acres for exchange . . . the heavily timbered lands it received in exchange were in large part sold to the Weyerhaeuser Timber Company.").

229 S.A.D. PUTER, LOOTERS OF THE PUBLIC DOMAIN: EMBRACING A COMPLETE EXPOSURE OF THE FRAUDULENT SYSTEM OF ACQUIRING TITLES TO THE PUBLIC LANDS OF THE UNITED STATES 379 (1908) (describing the "320,000 acres selected by the railway company in Oregon"); *see also* ARTHUR V. SMYTH, MILLICOMA: BIOGRAPHY OF A PACIFIC NORTHWESTERN FOREST 13 (2000) ("320,000 acres were Douglas-fir in Oregon.").

County from Northern Pacific for $5 an acre.[230] This acreage was also acreage that Northern Pacific had obtained through exchanging Mount Rainier acreage, and was Weyerhaeuser's first acquisition for its Millicoma Tree Farm, which would expand to 214,000 acres by the early 1990s.[231] When Weyerhaeuser's Coos County holdings had grown to 100,000 acres by 1944, Weyerhaeuser purportedly planned to cut on an extended rotation that would supply its local mill indefinitely.[232] Weyerhaeuser commenced logging its Millicoma Tree Farm in 1950[233] and had substantially logged it over by 1990, in a mere forty years.[234]

In 2016, Weyerhaeuser purchased Plum Creek Timber Company for $8.4 billion, in a deal that "couldn't get any bigger."[235] Plum Creek was spun off from Burlington Resources in 1989; Burlington Resources was itself a spinoff of Burlington Northern Railroad's nonrailroad operations, and Burlington Northern itself was the product of the merger of four James J. Hill-affiliated railroads (including the Northern Pacific and the Great Northern Railway), and therefore held millions of acres of federally granted forestland. Weyerhaeuser now wields control over approximately eleven million acres of American timberland, including 2.5 million acres located in Oregon and Washington. In 2020, Weyerhaeuser reported almost $8 billion in revenue.[236] Much of the wealth gained by this timber goliath comes from its exploits under a permissive forest management regime described below.

Notably, timber corporations have transmuted in recent times to capitalize on new financial strategies in a rapidly evolving global market economy.[237] Increasingly, timber corporations reconfigure themselves to become Real Estate Investment Trusts (REITs) to take advantage of a tax law that incentivizes investment in a wide range of

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230 LIONEL YOUST, ABOVE THE FALLS: AN ORAL AND FOLK HISTORY OF UPPER GLENN CREEK 189 (2d ed. 2003).

231 *Id.* at 191.

232 *Id.* at 192.

233 *Id.* at 108.

234 *Id.* at 252–53.

235 Sanjay Bhatt, *Weyerhaeuser Is Buying Plum Creek for $8.4B to Form Timber Giant*, SEATTLE TIMES (Nov. 9, 2015), https://www.seattletimes.com/business/weyerhaeuser-plum-creek-to-combine-into-one-timber-giant/ [https://perma.cc/DVJ9-77LT].

236 *Annual Report and Form 10-K: 2020*, WEYERHAEUSER, https://www.annualreports.com/HostedData/AnnualReportArchive/w/NYSE_WY_2020.pdf [https://perma.cc/4G7A-42GN].

237 For an examination of the corporatization of Oregon's private timberlands, see Schick et al., *supra* note 63.

income-producing real estate.[238] While the law was intended to encourage investment in traditional commercial and industrial real estate, investors began to use the act for timberlands, with the result that many timberlands are now owned by REITs rather than traditional timber companies. Crucially, to receive favorable tax benefits, a REIT under the 1960 Act must distribute at least ninety percent of its taxable income as dividends. As a result, distant shareholders of REITs hold a stake in timber yields of Oregon forests. The governance of timber entities like Weyerhaeuser—now the largest private timberland REIT in the United States—reflects this shift. No longer is Weyerhaeuser run by a person with a timber background reminiscent of its founder, Frederick Weyerhaeuser; the present chief executive officer, Devin Stockfish, is a former lawyer at Starbucks Corporation with an earlier background in mechanical engineering.

Along with the rising prominence of REITs, another federal law fueled the corporatization that now dominates Oregon private forestlands. In response to a requirement in the Employee Retirement Income Security Act of 1974 (ERISA) to diversify private pension plans beyond stocks and bonds, timberland investment management organizations (TIMOs) sprang into existence to provide ERISA-qualifying investment opportunity.[239] Unlike REITs, TIMOs do not own timberland directly. Instead, institutional investors give money to TIMOs, which in turn manage timber assets to achieve a return for their investors. A REIT like Weyerhaeuser is publicly traded and owns the forestlands it manages.[240] On the other hand, a TIMO such as Hancock Natural Resource Group does not own the forestland but instead manages private forestland for investors such as pension funds.[241] TIMOs are essentially "middlemen": they are given funds by institutional investors, and in turn, TIMOs "acquire and manage timberland investments on their behalf."[242] Practically speaking, REITs and TIMOs differ only in their style of management. While REITs are more beholden to the quarterly expectations of their shareholders, TIMOs allow forestry companies to defer harvests during

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238 Cigar Excise Tax Extension of 1960, Pub. L. No. 86-779, 75 Stat. 998 (1960). For discussion, see Brooks Mendell, *From Cigar Tax to Timberland Trusts: A Short History of Timber REITs and TIMOs*, FOREST HIST. TODAY, 32 (2016).

239 *Id.* at 34.

240 John Kitzhaber, *The Future of Forest Policy in Oregon: Summary of Findings*, (Sustainable Northwest), Aug. 2021, at 5.

241 *Id.*

242 Mendell, *supra* note 238, at 34.

down years while ensuring their institutional investors a long-term investment return (so-called patient capital).[243] Nonetheless, the two view timberlands as "standing inventory," and increasingly, REITs and TIMOs are selling forestlands to each other[244]—often capitalizing on tax advantages, subjecting private forestlands to an unending cycle of competitive harvesting and market speculation, and syphoning off regional value into the vaults of global investors.

As a result of REITs and TIMOs, timber companies have attracted big money investors the world of forestry had never seen before, with the result that management decisions are made by distant entities to maximize revenue for investors—without regard to the interests of localities reliant on the forest.[245] As a notable example, the world's largest bank, JPMorgan Chase & Co., acquired the Portland-based TIMO, Campbell Global, LLC.[246] Campbell Global manages 369,000 acres of timberland in three Western states,[247] is worth roughly $5.6 billion, and claims 182 companies in its "corporate family."[248] To the corporate owners, Oregon provides a modern resource colony—something of a forest ATM so to speak—as forestland becomes another "asset class" in a diversified investment portfolio.[249] Seeking ever-greater profits, this nearly invisible corporate hand plays an enormous role in Oregon forestry today.

Absentee corporate land ownership and decision-making has long spawned frustration on the part of rural Oregonians, some of whom have expressed discontent at the growing consolidation of property, colossal tax breaks (yielding less revenue for community needs such as schools and libraries), and shedding of traditional values in favor of

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243 Kitzhaber, *supra* note 240, at 6.

244 Mendell, *supra* note 238, at 35.

245 *Id.*

246 *World's Largest Banks 2019*, RELBANKS.COM, https://www.relbanks.com/worlds-top-banks/market-cap-2019 [https://perma.cc/4BTA-X7B5].

247 *Campbell Global, LLC*, SUSTAINABLE FORESTRY INITIATIVE (July 28, 2022), https://sfidatabase.org/simple-search-results/item/3468-campbell-global-llc-northwest-region [https://perma.cc/V4QT-B8XM].

248 *Campbell Global, LLC Company Profile*, DUN & BRADSTREET, https://www.dnb.com/business-directory/company-profiles.campbell_global_llc.3c0ef98c0b1d52b869f7ff1c0059dc71.html (last visited Sept. 21, 2022).

249 *In the News*, CAMPBELL GLOB., https://www.campbellglobal.com/about/news [https://perma.cc/PBN7-DHL4]. Not surprisingly, the press release announcing the acquisition touts sustainability and carbon offset markets as one objective. *Id.*

profit.[250] Often too, instead of supporting a local mill economy with timber, industry exports logs from its lands to distant markets.[251] Some observers in Oregon note that absentee owners—whether wealthy individuals or corporate giants—diverge markedly in management vision from that of rural farmers and small forestland owners (who tend to support sustainability, landscape conservation, agriculture, and ecological knowledge).[252] As the city manager of a rural Oregon timber town located next to Weyerhaeuser lands complained in an exposé by *Oregon Public Broadcasting* (*OPB*), "You're left still with these companies that have reaped these benefits, [and] those small cities that have supported them over the years are left in the dust."[253]

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250 *See* R. Proffitt Shirack & L.M. Eisgruber, *Who Owns the Rural Land in Oregon?*, 676 CIRCULAR INFO. (1979) (relaying concerns of rural Oregonians, among them: "A few individuals own most of the land," and "most of the land is owned by people who do not live on it or anywhere near it"). *See generally* Andrew Gunnoe, *Financialization of the US Forest Products Industry: Socio-Economic Relations, Shareholder Value, and the Restructuring of an Industry*, 94 SOC. FORCES 1075, 1095–96 (2016) (tracing the roots of corporate financialization and consolidation in the American timber industry during the 1990s); Schick et al., *supra* note 63 (tracing the corporatization and consolidation of Oregon's timber industry beginning in the 1990s and how "Wall Street investment funds" have "reap[ed] the benefits of timber tax cuts that have cost [Oregon] counties at least $3 billion in the past three decades[]"). Studies outside Oregon show a familiar cycle characteristic of absentee ownership: timber industries enter the region, destroy forests, export their products, and escape taxes, while indicators of community distress rise in the form of higher poverty, unemployment, food insecurity, and SNAP assistance. *See* Conner Bailey et al., *Taking Goldschmidt to the Woods: Timberland Ownership and Quality of Life in Alabama*, 86 RURAL SOCIO. 50, 50 (2021) (finding that "concentrated and absentee ownership of timberland exhibit a significant adverse relationship with quality of life as measured by educational attainment, poverty, unemployment, food insecurity, eligibility for free or reduced-price lunch at public schools, Supplemental Nutritional Assistance Program participation, and population density[]").

251 *See generally* Schick et al., *supra* note 63 ("In western Oregon, at least 40% of private forestlands are now owned by investment companies that maximize profits by purchasing large swaths of forestland, cutting trees on a more rapid cycle than decades ago, exporting additional timber overseas instead of using local workers to mill them and then selling the properties after they've been logged.").

252 *See* Peter Jensen, *Going From "Easement Curious" to "Easement Serious" to Preserve Oregon's Last Great Places*, OR. AGRIC. TRUST (Aug. 18, 2020), https://www.oregonagtrust.org/blog/2020/8/18/going-from-easement-curious-to-easement-serious-to-preserve-oregons-last-great-places [https://perma.cc/E89M-HPN7]; Chuck Willier, *Get Wall Street out of Oregon's Forests*, ST. ROOTS (Jan. 13, 2021), https://www.streetroots.org/news/2021/01/13/opinion-get-wall-street-out-oregon-s-forests [https://perma.cc/NSX5-YL4F]; Jayson Jacoby, *Forest Owners' Group Revived*, BAKER CITY HERALD (Sept. 8, 2021), https://www.bakercityherald.com/news/local/forest-owners-group-revived/article_f76bc19c-0ff5-11ec-8f02-ef4318c5c301.html [https://perma.cc/Z94B-FCBV].

253 Schick et al., *supra* note 63.

b. Small Woodland Owners and Land Trust Forest Ownership

About three million acres of privately owned forest in Oregon remain in the hands of small woodland owners, most with property ranging from one to one hundred acres.[254] These owners typically manage their property in a manner decidedly different than the large corporate owners. For the most part, their management supports conservation goals, reflecting regenerative practices which more closely approaches "an economy in service to life."[255] Leading forest researchers have observed that owners of smaller woodlots that have an intimate relationship with the land are more likely to be responsible stewards:

> Family forest landowners generally have a . . . complicated and diverse set of goals. . . . [B]eauty/scenery, protecting and improving wildlife habitat, passing land to their heirs, privacy, protecting biodiversity, and protecting water were the most important reasons for owning forest. . . . [S]tudies substantiate that financial return from timber production is not the sole goal, or perhaps even a major goal, for many family forest landowners. Rather, they have a multiplicity of goals into which timber production and harvest must fit.[256]

Another much smaller amount of land is controlled by land trusts either in fee simple absolute or under a conservation easement. While far more limited in geographic scope, the impact of these land trust holdings is potentially great because their practices may explore the cutting edge of "climate smart forestry," which grows and protects trees to store carbon.[257] Innovative practices on land trust lands may provide proof of concept for practices that can be adopted by larger holdings. Managers attempt to mimic disturbances that could typically occur in a natural setting (such as from fire) and, in this way, aim to maintain the net function and dynamic of the forest ecosystem.[258] The Pacific

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254 *See* Dave Kvamme, *Doubling Down on Family Forest Landowners*, OR. FOREST RES. INST. (Aug. 27, 2013), https://oregonforests.org/blog/doubling-down-family-forest-landowners [https://perma.cc/8NLE-LN3C] (but noting the state's definition for "family forestland" is up to 5,000 acres); *Our History*, OR. SMALL WOODLANDS ASS'N, https://www.oswa.org/blog/about-us/ [https://perma.cc/7EGK-2RXX].

255 *See* HUNTER LOVINS ET AL., A FINER FUTURE: CREATING AN ECONOMY IN SERVICE TO LIFE (2018).

256 JERRY F. FRANKLIN ET AL., ECOLOGICAL FOREST MANAGEMENT 151 (2018).

257 *See Forests*, ECOTRUST, https://ecotrust.org/our-programs/forests/ [https://perma.cc/WQN4-LFSC]. Land trusts vary greatly in their adoption of climate smart forestry practices, but in general their conservation vision allows for advancement in this area.

258 Euan Bowditch et al., *What Is Climate-Smart Forestry? A Definition from a Multinational Collaborative Process Focused on Mountain Regions of Europe*, 43

Forest Trust, for example, manages a seven thousand acre tract in Oregon with the goal of sustainable, climate smart forestry compatible with economic productivity.[259] The efforts in these forests have yielded positive results, such as protecting the habitat of threatened species like the northern spotted owl and the coho salmon. In turn, this restoration of healthy habitat also enhances a carbon "sink," with larger trees better able to absorb carbon dioxide.[260]

A template for sustainable forest practices exists in the form of a certification program developed by the National Forest Stewardship Council.[261] The recommended actions include longer harvest rotations, buffers around water-based habitats, prohibition of certain chemicals, protection of crucial forest areas, and engagement with tribes having aboriginal interests in the land.[262] Importantly, while profit-driven corporate ownership currently dominates the private forestlands in Oregon, there appears significant interest and momentum toward sustainable forestry practices, many of which are already practiced on the smaller woodland lots that are owned by families or local entities.[263]

The Parts below describe the framework of private forestry regulation in Oregon, while a later discussion (Section VI.C) evaluates this regulatory framework against the fiduciary standards that Oregon forestry officials are charged with upholding under the public trust principle. Given that many private woodlot owners are already

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ECOSYSTEM SERVS. 1, 1 (2020); *see also* Michael Case, *Forest Restoration Climate Change Resilience*, NATURE CONSERVANCY (2022), https://www.nature.org/en-us/about-us/where-we-work/united-states/washington/stories-in-washington/forest-restoration-climate-change-resilience/ [https://perma.cc/B9DA-75ST] (describing the Nature Conservancy's research in the Ellsworth Creek Preserve, an eight thousand-acre conserved area in southern Washington state).

259 *See Conservation Projects*, PAC. FOREST TRUST, https://www.pacificforest.org/conservation-projects/ [https://perma.cc/33VG-3U69].

260 *See* Genevieve Bennett et al., *How to Rebuild Global Carbon Sinks*, FOREST TRENDS (Mar. 7, 2019), https://www.forest-trends.org/blog/rebuild-carbon-sinks/ [https://perma.cc/E8S9-FHF3].

261 *Certification*, FOREST STEWARDSHIP COUNCIL US, https://us.fsc.org/en-us/certification#:~:text=FSC%20certification%20ensures%20that%20products,FSC%20US%20National%20Standard%20(v1 [https://perma.cc/D4E2-GT3Q].

262 *See Climate-Smart Forestry*, ECOTRUST, https://ecotrust.org/project/climate-smart-forestry/ [https://perma.cc/M7W7-XGCN].

263 *See* Schick et al., *supra* note 63; *Western Oregon Land Ownership*, COAST RANGE ASS'N (2020), https://coastrange.org/wp-content/uploads/2020/12/Statewide.pdf [https://perma.cc/WEU9-37MM]; OREGON SUSTAINABLE FORESTRY INITIATIVE IMPLEMENTATION COMMITTEE, SUSTAINABLE FORESTRY PRACTICES FOR LANDOWNERS IN OREGON 3, 18–19 (2011).

managing their lands in a more sustainable way by their own prerogative, the regulatory framework has the most acute impact on industrial forest practices perpetuated by corporate managers. Broadly speaking, private forestland management is subject to four main laws: the 1971 Forest Practices Act (FPA), Senate Bill 1602 (SB 1602) (chemical spray legislation), the federal ESA, and the recently passed state-level Private Forest Accord (PFA) (incorporated into recent legislation). A regulatory takings law, Measure 49, also has bearing, as explained below.

2. The Oregon Forest Practices Act

Oregon's nascent forest protection agenda began in 1941, when the state passed the Oregon Forest Conservation Act and became the first state in the nation to require "regeneration" (replanting clear-cut areas) on all state and private forestland.[264] Decades later, Oregon became the first state to implement comprehensive forest management laws through the FPA.[265] Simultaneously endorsing continued growth, harvesting, and protection of the state's "forest tree species, soil, air, and water resources," the legislation tasked the State Board of Forestry with establishing mandatory minimum standards to achieve these ends.[266] Over time, Oregon regressed from having the nation's first comprehensive private forest management framework to having the weakest and most permissive regulatory scheme on the West Coast.[267]

Currently, the FPA allows for extensive clear-cutting (up to 240 acres) with little or no notice or environmental oversight, promulgates no clear standard for buffer zones, prevents local water boards from adapting foresting practices to their needs, and disregards cumulative

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264 OR. REV. STAT. §§ 527.010–527.240, 527.990(1), *amended by* Or. Laws ch. 316 (recodified at OR. REV. STAT. §§ 527.610–527.730, 527.990(1) (1985)); *see Forest Facts: Forest Practices*, OR. DEP'T OF FORESTRY (May 2009), https://www.oregon.gov/ODF/Documents/AboutODF/ForestPracticesFactsheet.pdf#:~:text=Forest%20management%20policy%20in%20Oregon%20dates%20back%20to,inception%20in%201971%2C%20which%20have%20strengthened%20the%20Act [https://perma.cc/5N3M-5ECB] ("Viewed as the forerunner of the current Forest Practices Act, the Conservation Act was the first of its kind in the nation.").

265 For analysis of the Act, see Peggy Hennessy, *Oregon Forest Practices Act: Unenforced or Unenforceable?*, 17 ENV'T L. 717, 720 (1987).

266 OR. REV. STAT. § 527.630(1) (1985).

267 *See* Tony Schick, *Who's Following the Forest Practices Act? Oregon Can't Say for Sure*, OR. PUB. BROAD. (June 13, 2019, 9:30 AM), https://www.opb.org/news/article/oregon-forests-logging-rules-compliance-controversy/ [https://perma.cc/K84W-W22Y]. For an example of a more comprehensive scheme, see the California Forest Practices Act, summarized in JAN G. LAITOS ET AL., NATURAL RESOURCES LAW 711, 712 (2d ed. 2006).

effects of logging on single watersheds with multiple operations.[268] Moreover, investigations of FPA compliance cast doubt on whether some landowners are meeting even these minimum standards.[269]

3. The Forest Aerial Spray Bill

In 2020, the Oregon legislature passed SB 1602, which in part requires notification of forestland pesticide application to interested nearby residents if pesticides are to be applied by helicopter.[270] Residents wishing to receive notifications must register to receive them,[271] and initial notices provide a ninety-day timeframe for allowable pesticide application,"[272] followed by additional notice the day before application.[273] SB 1602 also imposed helicopter spray buffers for "inhabited dwellings," schools, and certain water intakes,[274] as well as fines for violations.[275]

While SB 1602 was passed in response to decades of grassroots advocacy against aerial spraying and its negative health and environmental effects, as outlined above, the bill was limited in scope to helicopter spraying (i.e., it does not apply to ground application), and

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268 *See* OR. REV. STAT. §§ 527.610–527.730, 527.990(1) (1985); *id.* § 527.670 (allowing harvest operation within 100 feet of fish-bearing stream subject to a required plan); *id.* § 527.676 (provision for wildlife tree retention and snags); *id.* § 527.750 (allowing harvest on certain type 3 units up to 240 acres); *id.* § 527.722(1) (precluding local regulation). For analysis, see Kate Anderson, *Passing the Private Forest Accord Would Help Oregon Catch Up with Washington and California*, SIGHTLINE INST. (Feb. 9, 2022, 12:16 PM), https://www.sightline.org/2022/02/09/passing-the-private-forest-accord-would-help-oregon-catch-up-with-washington-and-california/ [https://perma.cc/B4GK-GAUP] ("Oregon's current rules allow logging and heavy equipment right up to the [tributary] stream bank, where it can expose, disturb, and compact soils . . . . This can stunt tree growth, choke downstream fish habitat with debris and sediment from runoff and erosion, and raise water temperatures."); *see also* OR. REV. STAT. § 527.710(8) (enacting minimal analytical requirements regarding cumulative impacts, especially when compared to the cumulative impact protocols set forth in CAL. CODE REGS. tit. 14, §§ 912.9, 932.9, 952.9 (2021)). For earlier analysis, see Hennessy, *supra* note 265, at 718, 723, 725 (citing instances where biologically ideal buffer zone requirements are commonly violated or, in some instances, waivable due to operational difficulty). The FPA will be modified by the new Private Forest Accord, as discussed *infra* note 282 and accompanying text.

269 *See* Schick, *supra* note 267; Hennessy, *supra* note 265, at 726.

270 OR. REV. STAT. § 527.789(2).

271 *Id.* § 527.787(1).

272 *Id.* § 527.789(2).

273 *Id.* §§ 527.790(1)(b), (3).

274 *Id.* § 527.797(2)(b).

275 *See id.* § 527.793 ("Failure to provide adequate notice prior to pesticide application under § 527.790 or notice of incomplete or complete application under § 527.791 may result in: a warning on the first day in violation, a fine of $1,000 on the second day in violation, and a fine of $5,000 for every day in violation from the third day onward.").

did nothing in the realm of transitioning forest practices away from intensive chemical use toward less ecologically harmful alternatives. Before the passage of SB 1602, no advance notice of impending aerial spraying was required in Oregon. In contrast, both Washington and California required, at minimum, five days advance notice.[276]

The movement to ban or seriously limit aerial spraying had persisted for decades in Oregon, but a breaking point occurred in 2013 after residents of Gold Beach were exposed to spray on property outside the application area and reported serious health effects.[277] Two years prior, residents in Triangle Lake cited health effects from aerial spray exposure, with urine samples confirming the presence of the herbicides 2,4,D and atrazine in their bodies.[278] Lax enforcement by state officials increased pressure to pass legislation, resulting in bipartisan passage of SB 1602 in 2020.[279]

4. The Endangered Species Act and the 2021 Private Forest Accord

The ESA forms a restrictive framework bearing upon timber activities on private forestland where listed species exist. Implemented by the NMFS and the USFWS (the Services), the ESA prohibits "take" of listed species, a term that includes adverse habitat modification.[280] As noted earlier, under section 10 of the ESA, the Services may

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276 *See* Jes Burns, *Oregon Aerial Pesticide Bills Get Hearings in Salem*, OR. PUB. BROAD. (Apr. 3, 2019, 11:15 AM), https://www.opb.org/news/article/oregon-aerial-pesticide-bills-get-hearings-in-salem/ [https://perma.cc/VQM7-284L].

277 *See* Carl Segerstrom, *Can a Campaign for Nature and Community Rights Stop Aerial Spraying in Oregon?*, HIGH COUNTRY NEWS (Oct. 23, 2019), https://www.hcn.org/issues/51.20/activism-in-oregon-the-fight-for-local-control-upends-western-norms-pesticides [https://perma.cc/2D5C-TDP4]; Clarren, *supra* note 83; Tony Schick, *How One Complaint Reveals the Flaws in Oregon's Pesticide Regulation*, OR. PUB. BROAD. (Dec. 1, 2014, 1:00 AM), https://www.opb.org/news/article/oregon-forest-practices-rules-fail-to-prevent-pest/ [https://perma.cc/6TGP-PBY5] [hereinafter Schick, *Flaws in Oregon's Pesticide Regulation*]; Tony Schick, *Southern Oregon Pesticide Case Highlights Gaps in State Oversight*, OR. PUB. BROAD. (Apr. 23, 2014, 12:00 PM), https://www.opb.org/news/article/curry-county-pesticide-case-highlights-gaps-in-sta/ [https://perma.cc/U9S4-688T] [hereinafter Schick, *Southern Oregon Pesticide Case*].

278 *Highway 36 / Triangle Lake: Background*, OR. HEALTH AUTH., https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/TRACKINGASSESSMENT/ENVIRONMENTALHEALTHASSESSMENT/HWY36/Pages/Background.aspx [https://perma.cc/FT8Z-M57K].

279 *See* Cassandra Profita, *Oregon Delays Forest-Spraying Pesticide Investigation*, OR. PUB. BROAD. (Mar. 21, 2012, 8:34 PM), https://www.opb.org/news/article/oregon-delays-forest-spraying-pesticide-investigat/ [https://perma.cc/ZM4T-8W7Z]; *cf.* Schick, *Flaws in Oregon's Pesticide Regulation*, *supra* note 277.

280 16 U.S.C. § 1538 (a)(1)(B)–(C); *id.* § 1533(d); Babbitt v. Sweet Home, 515 U.S. 687 (1995).

negotiate an HCP with landowners to protect the species yet allow some incidental "take" to go forward under an ITP.[281] Oregon Governor Kate Brown launched a process to negotiate a broad agreement between conservationists and private timberland owners to produce a consensus framework that could guide future development of a massive HCP that would be used in an application to the Services for an ITP that would cover several species of salmon and other fish, four species of salamander, and a frog located on private lands. After eighteen months of study and mediated negotiation, in October 2021, conservation and forest interests signed the PFA, which crafted new forestry limits on the ten million acres of private forestland in Oregon.[282] The PFA envisions an HCP lasting fifty years for the fish species and twenty-five years for the amphibians.[283] The twenty-five signees to the PFA are thirteen conservation groups including Oregon Wild, the Wild Salmon Center, and the Audubon Society of Portland, and twelve timber industry representatives, such as Campbell Global, Weyerhaeuser, and Roseburg Forest Products.[284] In March 2022, the Legislature directed the State Board of Forestry to establish new rules in the FPA to reflect the provisions of the PFA.[285] Thus, in significant ways, the PFA is legally braided in with the ESA and the state's FPA.

The central focus of the PFA is riparian protection of fish, extending the width of buffer areas (where logging is prohibited) along streams.[286] Other provisions set limits on logging steep slopes and impose measures for forest roads. The participants agreed to advance these measures in an HCP and ITP application. Notably, however, the FPA does not address the forest ecology as a whole, other imperiled species (beyond those subject to the FPA), or climate concerns.

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281 16 U.S.C. § 1539(a)(1)(B).

282 PRIVATE FOREST ACCORD (presented Feb. 2, 2022), https://www.oregon.gov/odf/aboutodf/documents/2022-odf-private-forest-accord-report.pdf [https://perma.cc/S6S6-7GHN] (enrolled under S.B. 1501, S.B. 1502, H.B. 4055, 81st Assembly (Or. 2022), to be codified OR. REV. STAT. §§ 527.610–527.770, OR. REV. STAT. ch. 315, and OR. REV. STAT. § 321.015, respectively) [hereinafter PRIVATE FOREST ACCORD].

283 *Id.* at 8.

284 *Id.* at 149–59.

285 *See Private Forest Accord*, OR. FOREST RES. INST., https://oregonforests.org/private-forest-accord [https://perma.cc/4GK4-23Y4]. The PFA was passed in three bills: SB 1501, SB 1502, and HB 4055. PRIVATE FOREST ACCORD, *supra* note 282, at 3.

286 *See* PRIVATE FOREST ACCORD, *supra* note 282, at 21 tbl.1 (increasing the buffer zone from twenty feet to 110 feet along medium-sized and large-sized fish-bearing streams in Western Oregon).

5. Measure 49

Measure 49 is a regulatory takings law. It was passed in 2007 to amend its 2004 predecessor, Measure 37, which required that state and local governments either waive land use regulations or compensate landowners when a regulation reduced their property's fair market value.[287] As an extreme measure that upended Oregon's land use laws and far exceeded federal constitutional takings requirements, Measure 37 needed correction.[288] Consequently, Measure 49 was aimed to narrow the scope of Measure 37's application.[289] But, significantly, it left in place a broad compensation requirement for regulations affecting forestry activities, with the result that forestland owners may seek compensation for regulations that lower their property values.[290] This undoubtedly poses a constraint on forest regulation, but the Measure has never been evaluated against the public trust principle, which has

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287 Oregon Property Land Use, Measure 37 (2004) (*amended by* Oregon Regulation of Development, Ballot Measure 49 (*codified as* OR. REV. STAT. § 195.305) (Measure 37 "requires state and local governments to compensate private property owners for the reduction in the fair market value of their real property that results from any land use regulations . . . that restrict the use of the subject properties[]"). For a discussion of Measure 49, see Abigail Blodgett, *Lessons from Oregon's Battle Over Measure 37 and Measure 49*, 26 J. OF ENV'T L. & LITIG. 259–72 (2011).

288 *See generally* Jeff Mapes, *How a "Little Old Lady" Nearly Gutted Oregon's Growth Rules*, OR. PUB. BROAD. (Aug. 12, 2022, 5:00 AM), https://www.opb.org/article/2022/08/12/oregon-urban-growth-boundary-land-use-law-dorothy-english-property-owners/ [https://perma.cc/U5W6-T97P] (detailing the struggle over rural lands and the unexpected consequences of Measure 37 that Measure 49 intended to correct: claims for strip malls, subdivisions, massive timber operations, and big box stores). *See also* BALLOT MEASURE 37 (2004); BALLOT MEASURE 49 (2007).

289 BALLOT MEASURES 37 (2004) AND 49 (2007) OUTCOMES AND EFFECTS, OREGON DEP'T OF LAND CONSERVATION & DEV. 14 (2011) ("Measure 49 was to prevent large-scale subdivision, commercial and industrial developments in prime farm lands, forest lands, and wilderness areas."); *id.* at 32 ("The state was involved in 416 lawsuits as a result of Measure 37. Under Measure 49, the number of lawsuits dropped substantially to 80."). For an explanation of its provisions, see *Measure 49*, DEP'T OF LAND CONSERVATION & DEV., https://www.oregon.gov/lcd/measure49/pages/index.aspx [https://perma.cc/F6N7-4VHH]; Michael C. Blumm & Erik Grafe, *Enacting Libertarian Property: Oregon's Measure 37 and Its Implications*, 85 DENV. L. REV. 279, 285 (2007) (explaining that Measure 49 was passed in an "effort to minimize" the effects of Measure 37's sweeping compensation requirement).

290 The Oregon statute provides:

> If a public entity enacts one or more land use regulations that restrict the residential use of private real property or a farming *or forest practice* and that reduce the fair market value of the property, then the owner of the property shall be entitled to just compensation from the public entity that enacted the land use regulation or regulations.

OR. REV. STAT. § 195.305(1) (emphasis added). The provision provides exceptions to this broad compensation requirement, but these are beyond the scope of this Article.

at times fortified regulation against takings claims when the regulation directly protects trust assets.[291]

6. The Government Relations Campaign

A review of private forestland ownership could not be complete without mention of the timber industry's commanding influence over Oregon politics and policymaking. One portal of obvious influence comes from the copious campaign contributions to the states' leaders—the governor, Secretary of State, legislators, county officials, and others. While Oregon is the twenty-seventh largest state by population, it ranks as the sixth highest state for corporate money donations, and takes the lead for per capita corporate giving.[292] From 2008 to 2016 alone, companies and industry groups have provided winning candidates with an estimated $43 million.[293] Timber money accounts for an average of $21,000 per lawmaker, the highest in the nation.[294] Part V.B.1 discusses the corruptive influence of campaign contributions in the context of the legislative fiduciary duty of loyalty.

Another obvious portal of influence is the Oregon Forest Resources Institute (OFRI), a state-funded agency largely charged with public outreach, education, and research.[295] OFRI's stated mission "supports and enhances Oregon's forest products industry by advancing public understanding of forests, forest management and forest products."[296] While a seemingly independent body on its face, the statutory criteria for board membership ensures that the OFRI will represent the timber interests. Out of eleven voting members, all must be from the

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291 See *infra* Sections III.E and VI.C.5.

292 Rob Davis, *Polluted by Money: Part One*, OREGONIAN (Feb. 22, 2019), https://projects.oregonlive.com/polluted-by-money/part-1 [https://perma.cc/F5R8-98UG].

293 *Id.*

294 *Id.* ("Per capita, per lawmaker and in sheer dollars, timber interests gave more to winning candidates in Oregon than anywhere in the nation."); *see also*, Aaron Mesh, *The King of Clackistan*, WILLAMETTE WK. (Oct. 30, 2012, 5:01 PM), https://www.wweek.com/portland/article-19841-the-king-of-clackistan.html [https://perma.cc/83NC-SPPE]. The chief executive officer of Stimson Lumber Company—described as "the man whose checkbook could upend Oregon politics"—has donated roughly $2.2 million to political campaigns in recent years. *Id.* This has earned him the rank of "Influencer" on the website Ballotpedia.com. *See Andrew Miller (Oregon)*, BALLOTPEDIA, https://ballotpedia.org/Andrew_Miller_(Oregon) [https://perma.cc/K8YN-2Y57].

295 OR. REV. STAT. § 526.640.

296 *About the Oregon Forest Resources Institute*, OR. FOREST RES. INST., https://oregonforests.org/about-ofri [https://perma.cc/4W5T-MWBL].

timber industry.[297] A recent joint investigative report by *OPB* and the *Oregonian* charged the OFRI with "act[ing] as a public-relations agency and lobbying arm for Oregon's timber industry."[298] The allegations triggered an audit by the Secretary of State's office which concluded in a report issued July 14, 2021:

> OFRI presents itself as objective, but at times oversimplifies complex forestry topics to the point of being misleading. The agency lacks quality standards and a documented and robust internal review process to ensure the production of complete and accurate public information.[299]

The auditors deferred legal conclusions to the Oregon Department of Justice.[300] Regardless of how that process resolves, the central role of OFRI in promoting industry-friendly forestry policy in the state can scarcely be doubted. During the 2021 legislative session, Oregon legislators considered, but did not pass, a bill that would have severely

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297 OR. REV. STAT. § 526.610(1)–(6). Of the two nonvoting members, one is the Dean of Oregon State University's College of Forestry, and the other is an appointed person to represent the public. *Id.* § 526.615.

298 Rob Davis & Tony Schick, *How a Public Institute in Oregon Became a de Facto Lobbying Arm of the Timber Industry*, OR. PUB. BROAD. (Aug. 4, 2020, 6:00 AM), https://www.opb.org/article/2020/08/04/oregon-forest-resources-institute-osu-timber-industry-investigation-lobbying/ [https://perma.cc/8YNK-HDLE].

299 *Oregon Forest Resources Institute: OFRI's Statute Undermines Its Public Benefit and the State Agency Is Not Transparent About Its Statutory Mandate to Support the Industry*, SEC'Y OF STATE OR. AUDITS DIV. I (July 2021), https://sos.oregon.gov/audits/Documents/2021-21.pdf [https://perma.cc/E5VG-LFWZ].

300 As of the time of this writing, the Oregon Department of Justice has not issued an opinion. OFRI summarized its response to one of the recommendations in the Secretary of State's audit as follows:

> OFRI worked with the Oregon Department of Justice (DOJ) and the Department of Administrative Services (DAS) to conduct a comprehensive review of the OFRI governing statutes and original statutory intent, and to understand which statewide policies apply to OFRI. Findings were provided to OFRI by the DOJ in a privileged and confidential attorney-client communication memo. The DOJ also provided a policy and procedures manual template document as an available resource. . . . OFRI will use the DOJ information and resources provided to complete a comprehensive policy and procedures manual for staff and board members in 2023.

Memorandum from OFRI Executive Director Jim Paul to Krystine McCants and Ian Green, Secretary of State's Office 9 (Dec. 2, 2022) (included in Feb. 7, 2023 Presentation to the Oregon House Committee on Agriculture, Land Use, Natural Resources, and Water by OFRIC Executive Director Jim Paul, PDF page 27, https://olis.oregonlegislature.gov/liz/2023R1/Downloads/PublicTestimonyDocument/45708 [https://perma.cc/H847-GJ8T]).

cut the OFRI's budget.[301] Against this complex background of forest law, the next Part turns to the public trust principle as a fiduciary paradigm to hold government accountable in the realm of forest management and regulation.

III
A FIDUCIARY PARADIGM OF MANAGEMENT

The public trust has been described as "the oldest expression of environmental law."[302] It presents the antithesis of the discretion model that has caused so many government agencies to legalize ecological destruction. This principle safeguards crucial natural resources as common property of all citizens and holds government, as trustee of those resources, to a quintessential duty of protection.[303] As the Supreme Court emphasized in *Geer v. Connecticut*: "[I]t is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to the people of the state."[304]

The public trust doctrine replaces government's otherwise nearly unfettered political discretion with strict fiduciary obligations consisting of both substantive and procedural standards. Designed to restrain and channel the sovereign's power over the natural commonwealth (the *res*), such standards compel government to act wholly and uncompromisingly in favor of present and future generations of citizens. As the *Geer* Court emphasized:

> The power or control lodged in the state, resulting from this common ownership, is to be exercised, like all other powers of government, as a trust for the benefit of the people, and not as a prerogative for the advantage of the government as distinct from the people, or for the benefit of private individuals as distinguished from the public good.[305]

Infused with expectations of democracy, the public trust repositions all players in their relationship to ecology. It conceives of government

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301 Tony Schick & Rob Davis, *After Our Investigation, Oregon House Moves to Curb Forest Institute's Power and Budget*, OR. PUB. BROAD. (June 8, 2021, 6:48 PM), https://www.opb.org/article/2021/06/08/after-investigation-oregon-house-moves-to-curb-forest-institute-power-and-budget/ [https://perma.cc/ENN4-EVR9].

302 Mary Christina Wood, *Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part I): Ecological Realism and the Need for a Paradigm Shift*, 39 ENV'T L. 43, 69 (2009).

303 *See* WOOD, *supra* note 22, at 103–25.

304 Geer v. Connecticut, 161 U.S. 519, 534 (1896).

305 *Id.* at 529.

officials as public trustees rather than as freewheeling political actors. It presents Nature as the trust *res*, a priceless endowment comprised of tangible and quantifiable assets, instead of a vague "environment" with amorphous value. The citizens stand as beneficiaries holding a clear public property interest in these natural resources,[306] rather than as weakened political constituents with increasingly desperate environmental appeals to bring to their public officials.[307] As Professor Joseph Sax observed more than four decades ago, the public trust demarcates a society of "citizens rather than of serfs."[308] At this point in history when forests come under siege by large corporations, and government becomes an accomplice in irrevocable resource loss, the trust demands massive rebuilding and restitution of the people's rightful natural wealth.

A. The Public Trust as a Public Property Principle

The core of the trust lies in a property right held by the people. Its roots trace to Roman law's *Institutes of Justinian*, which declared public property rights that became embedded in the legal systems of nearly all nations of the world. The *Institutes* stated: "Thus, the following things are by natural law *common to all*—the air, running water, the sea, and consequently the sea shore."[309] In early American jurisprudence, such anciently recognized common ownership evolved into a trust concept that limits the government's ability to privatize crucial resources.[310] A trust is a unique form of property that splits the ownership of wealth between a trustee and a beneficiary. The trustee controls the assets but must manage them for the *exclusive and singular* benefit of the beneficiary. In a public trust, courts designate government, a perpetual institution of society, as the trustee of crucial natural resources. The beneficiaries of the trust are the citizens, encompassing both present and future generations.[311]

The trust protects against the consumption of the public commonwealth by securing the perpetual *public property right* in

306 *Id.* at 534; *see also* Torres & Bellinger, *supra* note 29, at 289–90.

307 *See generally* Torres & Bellinger, *supra* note 29.

308 Mary Christina Wood, *The Planet on the Docket: Atmospheric Trust Litigation to Protect Earth's Climate System and Habitability*, 9 FLA. A&M U. L. REV. 259, 262–63 (2014) (quoting Professor Sax); *see also* Torres & Bellinger, *supra* note 29, at 289–90.

309 J. INST. 2.1.1.

310 *See* Harrison C. Dunning, *The Public Trust: A Fundamental Doctrine of American Property Law*, 19 ENV'T L. 515, 516 (1989).

311 WOOD, *supra* note 22, at 165–207.

crucial natural resources. In the lodestar American public trust case, *Illinois Central Railroad v. Illinois*, the U.S. Supreme Court held that a state legislature did not have the power to convey the shoreline of Lake Michigan to a private railroad company.[312] The court ruled that the shoreline was a resource of great "public concern" that must be held in trust for the people as a whole to serve public interests (recognized then as fishing, navigation, and commerce).[313] Conveying such an important resource to a private party would "be a grievance which never could be long borne by a free people."[314] The doctrine protects reserved, inalienable property rights held by the public in crucial resources from monopolization or destruction by private interests and gives force to the expectation—central to the purpose of organized government—that natural resources essential for survival will remain abundant, justly distributed, and passed on to future generations.[315] President Roosevelt eloquently expressed the essence of the public trust when he stood at the rim of the Grand Canyon in 1903 and declared: "We have gotten past the stage, my fellow citizens, when we are to be pardoned if we treat any part of our country as something to be skinned for two or three years for the use of the present generation, *whether it is the forest*, the water, the scenery; whatever it is handle it so that your children's children will get the benefit of it."[316]

Anchoring the public trust is the public interest in navigable waterways, and from there many (though not all) courts invoked the logic of the trust to expand protection to other crucial resources.[317] The public trust came embedded in the sovereign architecture of Oregon when Oregon entered the nation as a state.[318] Oregon's Statehood (or Enabling) Act ensured that public property rights in free-flowing navigable waters were protected from private monopolization by declaring rivers as "common highways and forever free."[319]

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312 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892).

313 *Id.* at 455.

314 *Id.* at 456.

315 WOOD, *supra* note 22, at 53.

316 Theodore Roosevelt, Presidential Address at the Grand Canyon (May 6, 1903).

317 *See supra* Section IV.A; *see also* Brief for Chernaik et al. as Amici Curiae Law Professors Supporting Petitioners at 15, Chernaik v. Brown, 475 P.3d 68 (Or. 2020) (discussing how Oregon courts have continually invoked [public trust principles] to protect the state's natural resources and assure public access to them for multiple generations of Oregonians since statehood).

318 Brief for Chernaik et al. as Amici Curiae Law Professors Supporting Petitioners at 15, *Chernaik*, 475 P.3d 78.

319 *Id.*

As early as 1869, the Oregon Supreme Court recognized and enforced the public trust when it ruled in *Weise v. Smith* that floating logs on the Tualatin River over private streambeds did not constitute a trespass, even when operators installed log booms on privately owned uplands where necessary to enable navigation.[320] In the same year, the court held that public trust rights extended to streams that were not navigable during all seasons.[321] The state's recognition of the trust continued when the Oregon Supreme Court declared in the 1967 *Corvallis Sand & Gravel Co. v. State* case:

> [A]lthough the title [to streambeds] passed to the state by virtue of its sovereignty, *its rights were merely those of a trustee for the public*. In its ownership thereof, the state represents the people, and the ownership is that of the people in their united sovereignty, while the waters themselves remain public so that all persons may use the same for navigation and fishing. *These lands are held in trust for the public uses* of navigation and fishery.[322]

B. The Constitutional Public Trust

Situating the trust in modern forest law requires exploring its constitutional foundation and its relationship with statutes. The trust has been described as "the slate upon which all constitutions are written."[323] Characteristically explained as an attribute of sovereignty, the trust remains a constitutive principle that government cannot shed

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320 *See* Weise v. Smith, 3 Or. 445, 450 (1869) (characterizing navigable waters as "public highway[s]" that the public had "an undoubted right to use" for legitimate purposes of trade and transportation); *see also* Brusco Towboat v. State, 567 P.2d 1037, 1043 (Or. Ct. App. 1977), *aff'd*, 589 P.2d 712 (Or. 1978) ("The *jus publicum* aspect of the state's ownership is rooted in a philosophical conception of natural law. The principle that the public has an overriding interest in navigable waterways and lands underlying them is as old as the waterways themselves, traceable at least to the Code of Justinian in the Fifth Century A.D. . . . The right of the public to use the waterways for these purposes [commerce, fishing, and recreation] has always been recognized at common law. As representative of the people, the sovereign bears the responsibility to preserve these rights." (citations omitted)); Winston Bros. v. State Tax Comm'n, 62 P.2d 7, 9 (Or. 1936) ("[A]lthough the title passed to the state by virtue of its sovereignty, its rights were merely those of a trustee for the public. In its ownership thereof, the state represents the people, and the ownership is that of the people in their united sovereignty, while the waters themselves remain public so that all persons may use the same for navigation and fishing. These lands are held in trust for the public uses of navigation and fishery . . . . Being subject to this trust, they are publici juris; in other words, they are held for the use of the people at large." (citations omitted)).

321 Felger v. Robinson, 3 Or. 455, 457–58 (1869).

322 Corvallis Sand & Gravel Co. v. State Land Bd., 439 P.2d 575, 582 (Or. 1968) (quoting *Winston Bros. Co.*, 62 P.2d at 7) (emphasis added).

323 WOOD, *supra* note 22, at 294 n.51.

or abdicate.[324] As the *Illinois Central* Court declared, "The state can no more abdicate its trust over property in which the whole people are interested . . . than it can abdicate its police powers in the administration of government."[325] One federal district court, in *United States v. 1.58 Acres of Land*, described the trust as being "of such a nature that it can be held only by the sovereign, and can only be destroyed by the destruction of the sovereign."[326] In *Juliana v. United States*, an ongoing climate case, the federal District Court of Oregon described the public trust doctrine as an "attribute of sovereignty" that "predated the constitution" and interpreted the public trust to be implicit in, and enforceable through, the due process clause of the U.S. Constitution, as the principle was "deeply rooted in this Nation's history and tradition" and "implicit in the concept of ordered liberty."[327]

1. The Reserved Inalienable Rights of the People

Many courts aptly describe the trust as embodied in the inalienable rights reserved by the people in forming their government. Rising from the simple premise that people grant power to their government, not the reverse, the logic animating the trust is that citizens would never give their government power to impair resources crucial to their survival and welfare, so they implicitly reserve unto themselves common property rights to these vital resources. These descriptions underscore the public trust doctrine as a pre-constitutional covenant inherent in the social contract between people and government. These inalienable reserved

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324 *See, e.g.*, Geer v. Connecticut, 161 U.S. 519, 527 (1896) (describing the sovereign trust over wildlife as an "attribute of government"); *see also* Shively v. Bowlby, 152 U.S. 1, 46 (1894) (stating that the tidelands trust "is regarded as incidental to the sovereignty of the state").

325 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892).

326 United States v. 1.58 Acres of Land, 523 F. Supp. 120, 124 (D. Mass. 1981).

327 Juliana v. United States, 217 F. Supp. 3d 1244, 1261 (D. Or. 2016). *But see* James L. Huffman, *Oregon Supreme Court Muddies the Waters:* Kramer v. City of Lake Oswego, 50 ENV'T L. 455, 475 (2020) (dismissing any constitutional nature of the trust, characterizing it instead as a political concept: "[T]he concept of trust is political, not legal. It has reference to the trust the sovereign people place in their representatives that government will exercise the police, eminent domain, and taxing powers for the people's benefit. Absent unconstitutional actions, there are no judicial remedies for breach of this public trust[]"). The position takes fundamental issue with the entire premise of a sovereign trust responsibility as articulated in the seminal *Illinois Central* case. *See also* Brief for Chernaik et al. as Amici Curiae Law Professors Supporting Petitioners at v, Chernaik v. Brown, 475 P.3d 78 (Or. 2020) (describing constitutional public trust responsibility).

rights "underlie and inform government's obligation to its citizens and cannot be abrogated."[328]

In a case decided by the Pennsylvania Supreme Court, *Robinson Township v. Pennsylvania*, Chief Justice Castille characterized the trust as embodying the "inherent and indefeasible" rights reserved by citizens.[329] He situated the trust in Article I of the state's constitution and wrote that public trust rights are "of such 'general, great and essential' quality as to be ensconced as 'inviolate.'"[330] The analysis finds compelling application in other states, including Oregon, because all states share the democratic premise of sovereign power granted by the people themselves.

In *Robinson*, the court overturned a state statute that had promoted highly destructive fracking across the state.[331] Although the Pennsylvania Constitution contains a specific public trust provision in section 27 (added in 1971),[332] the *Robinson* opinion made clear that section 27 created no new rights but instead enumerated preexisting rights that the people had reserved to themselves in creating their state's government: section 27 *reflected*, rather than *created*, the public trust obligation.[333] As the Pennsylvania Supreme Court later explained in adopting the *Robinson Township* analysis in *Pennsylvania Environmental Defense Foundation v. Commonwealth*:

> [The state legislature] derives its power from Article III of the Pennsylvania Constitution which grants broad and flexible police powers to enact laws for the purposes of promoting public health, safety, morals, and the general welfare. These powers, however, are expressly limited by fundamental rights reserved to the people in Article 1 of our Constitution. Specifically, Section 1 affirms, among other things, that all citizens "have certain inherent and indefeasible rights." . . . [T]he rights contained in Article 1 are "excepted out of

328 Torres & Bellinger, *supra* note 29, at 289–90; *see also* DOUGLAS QUIRKE, THE PUBLIC TRUST DOCTRINE: A PRIMER 3 (2016) (quoting Arnold v. Mundy, 6 N.J.L. 1, 11, (N.J. 1821): "The first American public trust doctrine case (from 1821) traces the PTD to 'the law of nature, which is the only true foundation of all the social rights.'").

329 Robinson Twp. v. Commonwealth, 83 A.3d 901, 947–48 (Pa. 2013). The reasoning behind the *Robinson Township* plurality opinion was reaffirmed by a majority of the Pennsylvania Supreme Court in Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911, 931 (Pa. 2017).

330 *Robinson Twp.*, 83 A.3d at 947–48 (quoting PA. CONST. art. I, § 25).

331 *Id.* at 979.

332 PA. CONST. art. I, § 27.

333 *Robinson Twp.*, 83 A.3d at 947–48.

> the general powers of government and shall forever remain inviolate."[334]

Article I, section one of the Oregon Constitution secures the same reserved rights of citizens, through its express reservation of "natural rights inherent in people."[335] Not surprisingly, other states have the same reservation as well, and a Washington court found that a similar clause supported a constitutional right to a stable climate system.[336] And in *Juliana*, the federal district court found that, "Although the public trust predates the Constitution, plaintiffs' right of action to enforce the government's obligations as trustee arises from the Constitution. . . . [P]ublic trust claims are properly categorized as

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334 Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911, 930–31 (Pa. 2017) (citations omitted).

335 OR. CONST. § 1, states:

> We declare that all men, when they form a social compact are equal in right: that all power is inherent in the people, and all free governments are founded on their authority, and instituted for their peace, safety, and happiness; and they have at all times a right to alter, reform, or abolish the government in such manner as they may think proper.

Oregon similarly has a constitutional provision that, like Pennsylvania's section 25, reserves powers in the people. *See* OR. CONST. § 33 ("This enumeration of rights, and privileges shall not be construed to impair or deny others retained by the people."). For discussion, see Torres & Bellinger, *supra* note 29, at 281.

The public trust exists not only in section 1 of the Oregon Constitution (reservation of powers to the people) but also in the state's Enabling Act, which protects the free-flowing rivers for the people. Amici Law Professors in *Chernaik* explained, in the context of Oregon's entry into the union:

> The Oregon public trust doctrine was embraced, although not established, in the Statehood (or Enabling) Act, created to protect free-flowing navigable waters against private monopoly. That Act pledged to the Union and to Oregonians that "navigable waters . . . shall be common highways and forever free." An Act: For Admission of Oregon into the Union (Oregon Statehood Act), 11 Stat 383, ch. 32, § 2 (1859). The purpose of § 2 of the Statehood Act, drawn from the Northwest Ordinance of 1787, was to ensure that waterways of importance to the Oregon public would continue to remain available for public use, not monopolized by private interests.

Brief for Chernaik et al. as Amici Curiae Law Professors Supporting Petitioners at 15–16, Chernaik v. Brown, 475 P.3d 78 (Or. 2020).

336 *See* Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA, 2015 WL 7721362, at *4 (Wash. Super. Ct. Nov. 19, 2015) (ruling that the state has a duty to regulate greenhouse gas pollution and holding that the "fundamental and inalienable rights" protected by Article I of the Washington constitution included a right to "preservation of a healthful and pleasant atmosphere"). "The enumeration of certain rights shall not be construed to deny others retained by the people." *Id.* (quoting WASH. CONST. art. I, § 30). For a survey of other states' constitutional provisions reserving rights to the people, see Torres & Bellinger, *supra* note 29, at 294.

substantive due process claims."[337] The framing of the trust as a right held by citizens against their government empowers Oregonians to assert forest protection founded in original liberty rather than political power. Inalienable and lodged indelibly within the constitutive foundation of the state itself, the citizens' public trust rights endure as long as the state endures.

2. The Reserved Powers of Future Legislatures

As a principle with constitutional force, the public trust doctrine applies to legislatures and the statutes they pass. As the federal district court in *Juliana v. United States* explained, "Public trust claims are unique because they concern inherent attributes of sovereignty. . . . a defining feature of that [trust] obligation is that it cannot be legislated away."[338] The Court in *Illinois Central Railroad* made it clear that the public trust binds legislatures when it overturned a legislative conveyance of the shoreline of Lake Michigan.[339] Probing deeply into the source of legislative power, the Court found that the legislature was limited by the reserved powers doctrine, which prevents one set of sitting legislators from taking action that will bind a future legislature in any crucial sphere of government concern.[340] The public trust applies this principle in the context of natural resources. Alienating resources that remain crucial to society would amount to relinquishing essential sovereign powers in violation of the constitutional reserved powers doctrine. As Justice Field declared in *Illinois Central*:

> The legislature could not give away nor sell the discretion of its successors in respect to matters, the government of which, from the very nature of things, must vary with varying circumstances. The legislation which may be needed one day for the harbor may be different from the legislation that may be required at another day. Every legislature must, at the time of its existence, exercise the power of the state in the execution of the trust devolved upon it.[341]

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337 Juliana v. United States, 217 F. Supp. 3d 1244, 1261 (D. Or. 2016).

338 *Id.* at 1260. While aspects of the case were overturned by a Ninth Circuit ruling on appeal, the panel did not disturb this part of the holding. *See* Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020). For a state case setting aside legislative action pertaining to state forest trust lands, see Skamania Cnty. v. State, 685 P.2d 576 (Wash. 1984) (finding that the statute violated the duties of loyalty and prudent management).

339 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 446 (1892).

340 *Id.* at 453.

341 *Id.* at 460. *See also Juliana*, 217 F. Supp. 3d at 1253. The court embraced the same reasoning, stating, "Plaintiffs' public trust claims arise from the particular application of the public trust doctrine to essential natural resources. With respect to these core resources, the

Clearly, a distrust of the legislative branch animates *Illinois Central* and other leading public trust cases, for the courts recognize that each legislative body consists of individuals who, seated for finite terms, may be tempted to purloin public property through legislative acts to serve their political allies. Justice Field explained that, without the public trust, "every harbor in the country [would be placed] at the mercy of a majority of the legislature of the state in which the harbor is situated."[342] The trust not only sets limits on the legislative power to privatize or damage natural resources but also enables courts to enforce that limitation through something akin to a judicial veto that invalidates the conveyance or offending statute.[343] In this manner, the public trust relies on courts to prevent any one set of legislators from wielding so much power as to cripple future legislatures in meeting the ecological needs of society. This logic bears acutely on forest management in Oregon, as the forests not only serve as linchpins of drinking water sources and broader ecology needed by citizens but also provide key regulation of the climate system upon which all planetary life depends.[344] Yet the pressure mounted by the Oregon timber industry remains focused and intense,[345] raising the constant specter of legislators selling out the future for present political gain. Bound by a constitutional trust, the legislature must carry out its fiduciary obligations to the people—not legalize their violation. The discussion below probes these aspects.

3. The Trustees

Applying the trust obligation to *both* state and federal governments becomes important because both sovereigns manage Oregon forests. Although the state trust is broadly recognized,[346] federal agencies tend to disclaim any public trust responsibility.[347] That position is anathema

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sovereign's public trust obligations prevent it from 'depriving a future legislature of the natural resources necessary to provide for the well-being and survival of its citizens.'" *Id*.

342 *Ill. Cent. R.R.*, 146 U.S. at 455.

343 *See* Robinson Twp. v. Commonwealth, 83 A.3d 901, 948 (Pa. 2013); *see also* Pa. Env't Def. Found. v. Commonwealth, 255 A.3d 289, 292 (Pa. 2021) (both cases reviewing statutes for compliance with public trust standards).

344 *See supra* Section I.A.1.

345 *See* discussion at *infra* notes 795–98.

346 *See* BLUMM & WOOD, *supra* note 25, at 6 ("State governments are well-established trustees under the PTD.").

347 *See* Michael C. BLUMM & MARY CHRISTINA WOOD, THE PUBLIC TRUST DOCTRINE IN ENVIRONMENTAL AND NATURAL RESOURCES LAW 338 (1st ed. 2013) (stating that "the

to the characterization of the trust as an inherent attribute of sovereignty, as the federal district court emphasized in *Juliana v. United States*.[348] Notwithstanding federal reticence, it is well-settled that the federal government must manage its public lands as trust assets.[349] One federal district court applied the public trust to the National Park Service in its management of redwood forest, requiring the agency to take action against clear-cutting on adjacent private lands that threatened the park.[350]

Within state and federal government, the trust applies to both the legislature and administrative agencies, the former being the primary trustee and the latter acting as agents for the trustee.[351] Within the state executive structure, the trust principle binds the responsible state agencies that have authority over the trust assets. Beyond the land management agencies, trustees include those agencies or subdivisions (i.e., counties and cities) that permit the resource-harming activity as well as those charged by law to protect the resource in question.[352] Applied to the context of Oregon forestry, primary trustees on the federal level include the U.S. Forest Service, the BLM, the USFWS,

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Department of Justice, representing the federal government, resists mightily any public trust duty in litigation"); *see also, e.g.*, Juliana v. United States, 217 F. Supp. 3d 1224, 1254 (D. Or. 2016).

348 *Juliana*, 217 F. Supp. 3d at 1259. The district court's *Juliana* decision was reversed by the Ninth Circuit on the grounds that ordering the federal government to create "a comprehensive scheme to decrease fossil fuel emissions and combat climate change" exceeded the court's authority, Juliana v. United States, 947 F.3d 1159, 1171 (9th Cir. 2020), but the court did not refute the premise of federal trust responsibility.

349 *See, e.g.*, Light v. United States, 220 U.S. 523, 537 (1911) ("All the public lands of the nation are held in trust for the people of the whole country."). *See also* United States v. Carmack, 329 U.S. 230 (1946); United States v. 11.037 Acres of Land, 685 F. Supp. 214, 217 (N.D. Cal. 1988); City of Alameda v. Todd Shipyards Corp., 635 F. Supp. 1447 (N.D. Cal. 1986). For analysis, see discussion in WOOD, *supra* note 22, at 134–35.

350 Sierra Club v. Dep't of the Interior (*Sierra Club I*), 376 F. Supp. 90, 95–96 (N.D. Cal. 1974) (finding Secretary of Interior bound by general fiduciary obligations in addition to those specified by statute); *see also* Sierra Club v. Dep't of the Interior (*Sierra Club II*), 398 F. Supp. 284 (N.D. Cal. 1975). In *Sierra Club II*, the court drew a trust obligation from a statute that requires the Secretary of Interior to manage national parks so as to leave them "unimpaired for the enjoyment of future generations." The National Environmental Policy Act (NEPA), applicable to all federal agencies, expresses an explicit trust duty in declaring a national obligation to "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations." 42 U.S.C. § 4331(b)(1).

351 *See* WOOD, *supra* note 22, at 125–40.

352 *See* Ctr. for Biological Diversity, Inc. v. FPL Grp., Inc., 166 Cal. App. 4th 1349 (2008) (finding, in public trust case challenging the effect of wind turbines on migratory birds, that the appropriate defendants would be the county that authorized the wind turbines as well as the California's Department of Fish and Game statutorily responsible for protecting the birds).

and the NMFS (the latter two of which have responsibility to protect imperiled species across federal forest lands). The state trustees include the State Land Board, the Oregon Board of Forestry, the Oregon Department of Agriculture (for its role in regulating toxic pesticides and herbicides on state forestlands), the Oregon Department of Fish and Wildlife (regulating activities affecting species across the state), and the timber counties. The various levels and branches of government must act as co-trustees over the trust resources, with an obligation to work together to protect trust resources.

4. Chernaik v. Brown

As an attribute of sovereignty itself, the public trust cannot be singularly dismantled by a court's failure to enforce it in a particular scenario. Nevertheless, in 2020, the Oregon Supreme Court dealt a blow to Oregon public trust jurisprudence in *Chernaik v. Brown*.[353] That case was part of a nationwide campaign of Atmospheric Trust Litigation (ATL) brought by young people who sought to hold their government agencies accountable for controlling carbon dioxide pollution.[354] Amidst devastating droughts and voracious wildfires that consumed much of the state, the need for such trust accountability in Oregon could hardly have been more compelling. As a Washington trial court found in a parallel ATL case, "as [youth] Petitioners assert and this court finds, their very survival depends upon the will of their elders to act now, decisively and unequivocally, to stem the tide of global warming by accelerating the reduction of emissions of GHG's before doing so becomes first too costly and then too late."[355]

Disregarding the public trust rights of youth as well as the dysfunctional governance that had long plagued the state's legislative climate efforts,[356] the lower courts dismissed the *Chernaik* case on the

353 Chernaik v. Brown, 475 P.3d 68 (Or. 2020).

354 *Id.*

355 Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA, 2015 WL 7721362, at *5 (Wash. Super. Ct. Nov. 19, 2015), *abrogated by* Aji P. *ex rel.* Piper v. State, 480 P.3d 438 (Wash. Ct. App. 2021).

356 For years the Oregon legislature failed in all attempts to pass a comprehensive climate bill. When one finally seemed at the brink of passage in 2019, a contingent of opposing legislators fled the state in order to deprive the majority the quorum necessary to pass legislation, becoming in essence illegal fugitives in Idaho, abdicating both their constitutional duty to legislate and their public trust responsibility to protect the crucial resources of Oregon from unabated carbon dioxide pollution. *See* Sarah Zimmerman & Gillian Flaccus, *Governor Sends Police After GOP Senators Who Fled Capitol*, ASSOC. PRESS (June 20, 2019), https://www.rochesterfirst.com/news/politics/oregon-gov-sends

grounds that the defendant agencies had unreviewable political discretion to handle all climate policy.[357] On appeal, the Oregon Supreme Court rendered an opinion that became an extreme outlier in public trust jurisprudence, giving Oregon the distinction of having perhaps the most restrictive trust interpretation in the country.[358] Specifically, it found that the state had no public trust obligation to protect the vital resources of the state apart from streambeds underlying navigable waters and the navigable water itself.[359] It also held that the state's fiduciary duty with respect to those streambeds and waters was limited to "the recognized duty that the state has to protect public trust resources for the benefit of the public's use of navigable waterways for navigation, recreation, commerce, and fisheries."[360] The court refused to recognize a duty to protect the climate system upon which all those public trust interests depend. Chief Justice Martha Walters penned a vigorous and scholarly dissent, arguing that the state held an affirmative public trust obligation to protect the state's public trust resources against "substantial impairment."[361]

While the *Chernaik* decision cannot be ignored, neither should it form indelible sidewalls of the Oregon public trust obligation. Lodged

-police-after-gop-senators-who-fled-capitol/ ("Oregon Gov. Kate Brown deployed the state police Thursday to try to round up Republican lawmakers who fled the Capitol."); *see also* Julie Turkewitz, *Oregon Climate Walkout Left Republicans in Hiding, Statehouse in Disarray*, N.Y. TIMES (June 28, 2019), https://www.nytimes.com/2019/06/28/us/oregon-climate-fight.html [https://perma.cc/6RSR-MPC3] (citing tweets that displayed outlaw posters stating "wanted: fugitives from justice").

357 Chernaik v. Brown, 436 P.3d 26, 28 (Or. Ct. App. 2019) (holding that the public trust doctrine "does not impose a fiduciary obligation on the state to take affirmative action to protect public-trust resources from the effects of climate change").

358 *Chernaik*, 475 P.3d at 68. On appeal to the Oregon Supreme Court, law professors nationwide submitted an amicus brief supporting the youth plaintiffs. Detailing the state's 160-year-old public trust doctrine, the amicus professors argued that the public trust could not be abdicated, as it was an attribute of sovereignty and an inalienable part of Oregon's constitution. *See* Brief for Chernaik et al. as Amici Curiae Law Professors Supporting Petitioners at 15, *Chernaik*, 475 P.3d 78.

359 *Chernaik*, 475 P.3d at 78.

360 *Id.* at 83.

361 *Id.* at 86 (Walters, C.J., dissenting):

> Because the purpose of the public trust doctrine is to ensure the public's rights to use and enjoy public trust resources now and into the future, the doctrine must impose an obligation to protect and preserve them. To ensure the future use and enjoyment of public trust resources, the state must do more than refrain from selling public trust resources and restricting their use. The state must act reasonably to prevent their substantial impairment.

See also id. at 93 ("Courts also must not shrink from their obligation to enforce the rights of all persons to use and enjoy our invaluable public trust resources.").

deeply in the inalienable reserved rights of Oregonians and forming an inherent attribute of sovereignty, the public trust endures even if, at a particular moment, the state's highest court refuses to enforce it. Notably, the *Chernaik* court expressly and repeatedly invited a more expansive interpretation of the trust in the future, stating, "We do not foreclose the possibility that the doctrine could expand to include other resources in the future . . . We also do not foreclose the possibility that the doctrine might be expanded in the future to include additional duties imposed on the state."[362] By the court's own design, therefore, the decision is not set in stone. Courts in other states have skirted restrictive prior decisions to expand the public trust.[363]

As a practical matter, courts notably shift their outlook in response to major societal shifts. Not long ago, for example, in finding a fundamental constitutional right to marry, the U.S. Supreme Court observed that the Framers of the Constitution "entrusted to future generations a charter protecting the right of all persons to enjoy liberty as we learn its meaning."[364] The inevitable calamities of climate disruption in Oregon may well embolden future Oregon Supreme Court justices to expand public trust protection of the resources that remain unquestionably crucial to Oregonians' survival.

Recognizing the possibility of public trust expansion in her dissent, Chief Justice Walters carefully mapped out what could well form the contours of a future majority decision of the Oregon Supreme Court.[365]

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362 *Id.* at 84.

363 *See* BLUMM & WOOD, *supra* note 25, at 137 n.7 (recounting California case law that expanded public trust, partially overturning prior restrictive interpretation in earlier caselaw).

364 Obergefell v. Hodges, 576 U.S. 644, 664 (2015).

365 Advocates should therefore search for opportunities to bring the argument again in a different set of circumstances. In this regard, two steps may provide a foundation for a future case. First, Oregonians might press their attorney general—a politically elected official—to present legal arguments in support of the people rather than contravene the public's assertion of public trust rights. The Attorney General enjoys great deference and influence before the courts and has the first opportunity to frame a case on behalf of the people she is bound to represent. At every step of the way in the eleven-year *Chernaik* case, Oregon's Attorney General staunchly maintained that the government had no trust responsibility to protect the crucial resources needed by Oregonians. Voters may choose to hold the Attorney General accountable for such positions, as the matter strikes to the core of that office's mission to serve and represent the public's interests, which may often diverge from an agency defendant's political interests. Second, advocates may seek to involve more governmental agencies and subdivisions in developing and explicitly embracing the public trust. In *Chernaik*, two counties (Multnomah and Clackamas) submitted an amicus brief and held a press conference supporting the youth plaintiffs, arguing that government should follow trust obligations owed to youth. *See Multnomah County Stands with Kids, Asks Oregon*

Meanwhile, other public trust litigation is moving forward in Oregon and has thus far successfully positioned the state as a trustee of all crucial natural resources. In *State v. Monsanto*, the state harnessed its public trust authority to sue a polychlorinated biphenyl (PCB) manufacturer for polluting natural resources across the state.[366] In rejecting a motion to dismiss, the trial court recognized the state's capacity, as trustee of the resources, to bring claims for damages against manufacturers of toxic PCBs.[367] An appeal of that decision to the Oregon Supreme Court would have provided another opportunity for the Court to delineate the public trust, but the case settled in December 2022.[368]

Supreme Court to Review Climate Case, MULTNOMAH CNTY. (Mar. 8, 2019), https://www.multco.us/sustainability/news/multnomah-county-stands-kids-asks-oregon-supreme-court-review-climate-case [https://perma.cc/9HJZ-NEXU]; *see also* Cassandra Profita, *Multnomah County Files Brief in Support of Youth Climate Lawsuit*, OR. PUB. BROAD. (Mar. 8, 2019, 2:00 PM), https://www.opb.org/news/article/climate-change-multnomah-county-files-brief-youth-lawsuit/ [https://perma.cc/M5W2-HD3S].

366 State v. Monsanto, No. 18CV00540, 2018 WL 8222423 (Or. Cir. Ct. Feb. 5, 2018).

367 State v. Monsanto, No. 18CV00540, 2019 WL 11815008, at *8 (Or. Cir. Ct. Jan. 9, 2019) ("[T]he State of Oregon must allow some use of public trust lands and waterways. It is also true that the State enjoys the right to exclude other uses, and to bring actions to recover for such trespasses."). In a later ruling, the court again wrote:

> Plaintiff owns all the waters located within Oregon. Plaintiff also owns all the submersible and submerged lands beneath all navigable waters within Oregon (even for those waters that are on federal or tribal lands). Plaintiff also holds in trust all wildlife within Oregon's borders, including those that interact (that is, cross borders) with federal and tribal lands. Plaintiff thus enjoys standing to seek to recover for the alleged harms covering these lands, waters, and natural resources.

State v. Monsanto, No. 18CV00540, 2021 WL 4877501, at *3 (Or. Cir. Ct. July 8, 2021). Throughout the *Monsanto* proceedings (simultaneous with the latter stages of the *Chernaik* litigation), Oregon pleaded its standing as a trustee to the court:

> The State brings this action in its sovereign capacity as trustee for all natural resources within its borders, which it holds and protects for the benefit of all Oregonians . . . . The State holds in trust for the public the bed and banks, and waters between the bed and banks, of all waterways within the State. By virtue of its public trust responsibilities, all such lands are to be preserved for public use in navigation, fishing, and recreation. The State is also the trustee of all natural resources—including land, water, wildlife, and habitat areas—within its borders. As trustee, the State holds these natural resources in trust for all Oregonians—preserving, protecting, and making them available to all Oregonians to use and enjoy for recreational, commercial, cultural, and aesthetic purposes.

Id. ¶¶ 9–10.

368 *See* Conrad Wilson & Cassandra Profita, *Oregon Reaches Nearly $700M Settlement with Monsanto Corporation Over PCB Contamination*, OR. PUB. BROAD. (Dec. 15, 2022), https://www.opb.org/article/2022/12/15/oregon-settlement-monsanto-pcb-contamination-attorney-general-ellen-rosenblum/ [https://perma.cc/P8EB-ZCVR].

Finally, Oregonians themselves should hold their leaders accountable to the public trust in their ongoing dialogue with agencies and legislators. This Article proceeds to explain the fundamental features of the trust as defined by courts in this country and in other nations. Subsequently, Parts V–VI apply the fiduciary duties to Oregon's forests.

C. The Fiduciary Framework

Fiduciary obligations create a coherent framework of government accountability in managing ecology.[369] In varying environmental contexts ranging from water to wildlife to beaches and streambeds, courts have created a set of standards designed to protect the ecological trust and ensure its perpetuation for future generations.

1. The Trustee's Obligations

Courts have adapted time-honored standards from private trust law to hold government accountable in managing the people's ecological *res*. Iterating a set of duties that are both substantive and procedural, courts have elaborated these most in the context of water trust law, but they equally pertain to any public trust resource.[370] There are six substantive duties:

1) protect the wealth of the trust against "substantial impairment;"
2) guard against waste of the *res*, which would deprive future generations of their just inheritance;
3) maximize the value of trust resources to the public;
4) refrain from privatizing trust resources or managing the trust for the "primary benefit" of private parties;
5) restore trust resources when damaged; and
6) recoup damages (called natural resource damages) from third parties that despoil the trust.

The five procedural duties are as follows:

1) maintain uncompromised loyalty and impartiality to the beneficiaries, eliminating sources of bias;

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369 *See* QUIRKE, *supra* note 328, at 2.

370 This caselaw is compiled in WOOD, *supra* note 22, at 125–64. It is a rare case that summons all or nearly all the duties, but for extensive discussion of multiple duties, see *In re* Water Use Permit Applications, 9 P.3d 409 (Haw. 2000); Robinson Twp. v. Commonwealth, 83 A.3d 901 (Pa. 2013); Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911 (Pa. 2017).

2) supervise agents;

3) exercise good faith and reasonable skill in managing trust assets;

4) exercise (pre)caution; and

5) furnish information to beneficiaries (an accounting) so that they may evaluate their trustee's performance.

The contours and nuances of these duties as applied to the forest context are explored in Part V.

2. An Affirmative Duty

Importantly, the duty of protection imposes an active duty, not a passive duty. This means that a trustee cannot sit idly by while trust resources are damaged. As one court said, "The trust reposed in the state is not a passive trust; it is governmental, active, and administrative [and] . . . requires the lawmaking body to act in all cases where action is necessary, not only to preserve the trust, but to promote it."[371] California courts have required a trustee to exercise "continuous supervision" over water permits and revoke them if necessary to protect the public interest.[372]

The affirmative nature of the trustees' duties remains imperative in the forest management context where climate, drought, and fire combine as threats to the *res*. The trustees must actively address these ecological syndromes rather than just sit by and chronicle the consequences. As more fully explained in Part V below, sovereign trustees must bring to bear the best available science and take a precautionary approach in developing strategies to meet these challenges. Universal, simplistic solutions such as "raking" the forest

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371 City of Milwaukee v. State, 214 N.W. 820, 830 (Wis. 1927); *see also* Just v. Marinette Cnty., 201 N.W.2d 761, 768–70 (Wis. 1972) (emphasizing "active public trust duty" on the part of the state that requires the eradication of pollution and the preservation of the natural resource held in trust); Ctr. for Biological Diversity, Inc. v. FPL Grp., Inc., 83 Cal. Rptr. 3d 588, 599 (Cal. Ct. App. 2008) (characterizing trust as imposing "affirmative duty"); *Pa. Env't Def. Found.*, 161 A.3d at 945 (stating that the legislative trustee has an "affirmative obligation to act to protect the environment"); QUIRKE, *supra* note 328, at 13.

372 *See* Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 723 (Ca. 1983) (also noting "continuing power of the state as administrator of the public trust, a power which extends to the revocation of previously granted rights"); *see also In re Water Use Permit Applications*, 9 P.3d at 453 (stating that the state is empowered "to revisit prior diversions and allocations, even those made with due consideration of their effect on the public trust").

(offered by President Trump in the wake of devastating California wildfires)[373] fail to meet the exigencies of today's world.

3. Separate from Statutory Obligations

As explained above, a multitude of federal and state agencies manage the Oregon Forest Trust pursuant to authority granted by statutes. These statutes give agencies enormous discretion, leaving huge gaps in protection. Often, agencies invoke their discretion to deliver politically favorable outcomes that benefit moneyed industry interests—allowing massive ecological destruction to occur at the expense of the public.[374] The public trust principle runs deeper than statutes. A bedrock principle, it preceded all the statutes and carries constitutional force as described above.[375] As such, the statutes themselves must measure up to the legislature's sovereign trust responsibility, and courts have overturned some legislative acts for failure to carry out the trust.[376] Similarly, the management and regulatory agencies are held to trust standards apart from their statutory mandates. As one state court made clear, "[M]ere compliance by [agencies] with their legislative authority is not sufficient to determine if their actions comport with the requirements of the public trust doctrine. The public trust doctrine at all times forms the outer boundaries of permissible government action with respect to public trust resources."[377]

D. Enforced by Courts

Trust enforcement falls to the judicial branch. As one court stated: "Just as private trustees are judicially accountable to their beneficiaries for dispositions of the res[ources], so the legislative and executive

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373 *See* Avi Selk, *Trump Suggests Californians Can Rake Their Forests to Prevent Wildfires. (He Is Wrong.)*, WASH. POST (Nov. 19, 2018, 8:03 AM), https://www.washingtonpost.com/world/2018/11/18/trump-suggests-californians-can-rake-their-forests-prevent-wildfires-he-is-wrong/ [https://perma.cc/G9N4-MEQ7].

374 The "politics of discretion" is thoroughly explored in WOOD, *supra* note 22, at 68–83.

375 *See* discussion at *supra* notes 323–27 and accompanying text.

376 Ariz. Ctr. for L. in the Pub. Int. v. Hassell, 837 P.2d 158, 168–69 (Ariz. Ct. App. 1991); *see also* Lake Mich. Fed'n. v. U.S. Army Corps of Eng'rs, 742 F. Supp. 441, 446 (N.D. Ill. 1990); Robinson Twp. v. Commonwealth, 83 A.3d 901, 948 (Pa. 2013) (overturning statute that promoted fracking); Pa. Env't Def. Found. v. Commonwealth, 255 A.3d 289, 292 (Pa. 2021) (overturning state forest leasing statute).

377 Kootenai Env't All., Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085, 1095 (Idaho 1983); *see also* Parks v. Cooper, 676 N.W.2d 823, 838 (S.D. 2004).

branches are judicially accountable for their dispositions of the public trust."[378] Courts have recognized a cause of action on the part of citizen beneficiaries to enforce the PTD against government.[379] As an Arizona court declared: "The beneficiaries of the public trust are not just present generations but those to come. The check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res."[380] Recognizing its constitutional force,[381] courts have held legislatures accountable to trust obligations.[382] One federal district court reasoned in finding a legislative grant of shoreline in breach of the public trust, "If courts were to rubber stamp legislative decisions . . . the doctrine would have no teeth."[383]

Appropriate judicial relief may consist of (1) declaring public trust rights and obligations, (2) ordering injunctive relief to stop damaging action, and/or (3) ordering implementation of a plan to protect and restore trust assets.[384] In climate litigation, judges have differed on whether the separation of powers precludes some forms of relief. The Ninth Circuit majority in *Juliana v. United States* found that a remedial plan was beyond the power of the court, but the dissent fervently disagreed, stating, "Plaintiffs' request for a 'plan' is neither novel nor judicially incognizable," and explaining, "After a fuller development of the record and weighing of evidence presented at trial, should the Court find a constitutional violation, then it would exercise great care in fashioning a remedy determined by the nature and scope of

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378 *Hassell*, 837 P.2d at 168–69 (citations omitted); *see also Lake Mich. Fed'n.*, 742 F. Supp. at 446.

379 *See* Ctr. for Biological Diversity, Inc. v. FPL Grp., 166 Cal. App. 4th 1349, 1368 (2008) (holding that the PTD action must be brought against government trustees, not private parties). For discussion on the judiciary and the public trust doctrine, see generally Sax, *supra* note 30; WOOD, *supra* note 22, at 230.

380 *Hassell*, 837 P.2d at 169 (interpreting public trust in conjunction with the gift clause of the state constitution).

381 *See* discussion *supra* note 323 and accompanying text; *see also* Dunning, *supra* note 310, at 516. Dunning writes,

> [I]ndicative of the [public trust] doctrine's fundamental nature . . . is the way the courts, the originators of the doctrine in this country, have in some states concluded that the doctrine is so entrenched as to be immune from legislative abolition. In those states the public trust doctrine has assumed the character of an implied constitutional doctrine.

Id.

382 *See* discussion at *infra* Section V.B.; *see also* Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892); *Lake Mich. Fed'n*, 742 F. Supp. at 446.

383 *Lake Mich. Fed'n.*, 742 F. Supp. at 446.

384 *See* QUIRKE, *supra* note 328, at 11–12.

that violation."[385] The majority's reluctance in the climate context undoubtedly stems from the magnitude of decarbonizing the nation's entire energy system and should not be taken to foreclose remedies in more discrete contexts such as regional or subregional forest protection and restoration. Importantly, once a court finds a public trust violation, the most productive avenue for a remedial phase may involve settlement negotiations culminating in a consent decree.[386]

With these trust parameters in place, the discussion now turns to the interface of public trust interests with private property rights—a matter that certainly has bearing on the ten million acres of privately held forest land in Oregon. The following discussion first explores the ecological duties of private property owners generally and then turns to the context of private forest ownership.

E. The Trust and Private Lands

In ecological terms, private property boundaries remain wholly artificial. As Aldo Leopold wrote, "[Land] is a fountain of energy flowing through a circuit of soils, plants, and animals . . . . [I]t is a sustained circuit, like a slowly augmented revolving fund of life."[387] Forest is forest, whether located within a national park or held by Weyerhaeuser Corporation, and it remains connected to the rest of the circuit that supports all society. This Article proceeds from the premise that all forests across Oregon are, in a fundamental sense, part of the commonwealth of the state, no matter where located and no matter who owns them. As a 1910 report of the Oregon Conservation Commission (created by the Oregon legislature) stated:

> Oregon's forests, next to land itself, are by far her most important natural resource . . . Forest wealth is community wealth . . . Oregon's forests are the assets of all its citizens. The lumberman or timber owner is, economically, only their agent in using them. The

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385 Juliana v. United States, 947 F.3d 1159, 1189 (9th Cir. 2020) (Staton, J., dissenting).

386 For discussion, see Wood, *supra* note 53, at 264, describing consent decrees in institutional litigation:

> One of the most promising aspects of institutional litigation is the opportunity for meaningful agreement between the plaintiffs and defendant agencies to drive forward a solution—one that otherwise might not occur outside of the litigation context. If the parties can agree on management parameters, these details can be wrapped into a consent decree that carries the ongoing force of a court order. Consent decrees can provide relief that exceeds the scope of relief the court could have awarded after a trial.

387 ALDO LEOPOLD, A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE 216 (1949).

> lumberman can change or move his business, but the people as a whole have a stake in forest preservation that is unalienable and paramount. Their prosperity depends upon it now and always. The question involved is not one of personal property but one of a community resource.[388]

Large, private industrial timber owners characteristically manage their forests with impunity to the broader public harm that comes from massive clear-cutting, spraying, and conversion of ancient forests to monoculture plantations.[389] Pollution and harm travel freely off the property while the owner's profit remains fully bounded within. Increasingly, the reality of centuries-long consequences from this mismanagement brings into clear focus a zero-sum game between present and future generations. As C.E.S. Wood stated so long ago, when forest antiquity is destroyed, "It cannot be built by Nature herself in less than a thousand years, nor indeed ever, for it is never renewed the same."[390]

Deeded boundaries do not excise large private forestland owners from legal responsibility, for as Eric Freyfogle writes, "The public has a legitimate interest in how *all* lands are used. No land use takes place in isolation."[391] While the legal inquiry necessarily changes as it crosses borders between public and private property, fundamental principles of property law—of which the public trust doctrine is an integral part[392]—anchor the analysis. The most basic is this: property remains a state-created legal institution—nothing more, nothing less. Citizens do not "own" property outside state institutions that recognize such ownership and define the bundle of protected interests.[393] Because the institution of private property was promulgated by a government of the people, "the right which each individual has over his

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388 Report of the Oregon Conservation Commission to the Governor at 12 (1910) (emphasis added). The commonwealth view of forests similarly took hold on the national level, voiced by Roosevelt in his speech to the first National Conservation Convention (his convening of U.S. governors in 1908). *See* Theodore Roosevelt, Declaration of the Conference of Governors (May 15, 1908).

389 *See infra* Section V.A, detailing forest damage.

390 Wood, *supra* note 1, at 627. For context, see Andy Kerr, *The Most Interesting Oregonian Ever: Charles Erskine Scott Wood*, ANDY KERR'S PUB. LANDS BLOG (Oct. 13, 2017), https://www.andykerr.net/kerr-public-lands-blog/2017/10/13/the-most-interesting-oregonian-ever-charles-erskine-scott-wood [https://perma.cc/JN6P-XTKU].

391 Eric T. Freyfogle, *Goodbye to the Public-Private Divide*, 36 ENV'T L. 7, 19 (2006).

392 *See* Dunning, *supra* note 310, at 516.

393 DALE D. GOBLE ET AL., WILDLIFE LAW: A PRIMER 58 (2d ed. 2019) ("[A] property owner enjoys protection only for property rights that are recognized by statutes or by the common law.").

own estate is always subordinate to the right which the community has over all; without this, there would be neither stability in the social tie, nor any real force in the exercise of Sovereignty."[394]

Operating as an agent of the people, government must strike a balance between the public interest and private rights when it defines and regulates private property. The New Jersey Supreme Court underscored the point, stating, "Property rights serve human values. They are recognized to that end, and are limited by it."[395] A long-standing maxim of common law holds that "one should so use his property as not to injure the rights of others."[396] As property law professors Eric Freyfogle and Dale Goble summarize, "A basic element of landownership for centuries has been the principle 'do no harm.' Landowners have never had the legal right to undertake activities that cause harm, either to neighbors or the surrounding community."[397] Moreover, as society changes, so does the legal interpretation of "harm." Noting that property law has experienced a long history with "many twists and turns," Freyfogle and Goble observe, "One lesson from this history is that each generation has seen fit to define land use 'harm' as it wants. Harm, that is, is a flexible notion."[398]

The balance that the state must strike between private property rights and societal needs changes, sometimes quite abruptly. Professor

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394 JEAN-JACQUES ROUSSEAU, ON THE SOCIAL CONTRACT, bk. I, § 9 (G.D.H. Cole trans., Dover Publications 2003) (1762).

395 State v. Shack, 277 A.2d 369, 372 (N.J. 1971); *see also* WOOD, *supra* note 22, at 130.

396 *See* GOBLE ET AL., *supra* note 393, at 58–59 ("A basic element of landownership for centuries has been the principle 'do no harm.' Landowners have never had the legal right to undertake activities that cause harm, either to neighbors or the surrounding community."); Commonwealth v. Alger, 61 Mass. 53, 84–85 (1851) ("We think it is a settled principle, growing out of the nature of well ordered civil society, that every holder of property, however absolute and unqualified may be his title, holds it under the implied liability that his use of it may be so regulated, that it shall not be injurious to the equal enjoyment of others having an equal right to the enjoyment of their property, nor injurious to the rights of the community. *All property in this commonwealth, as well that in the interior as that bordering on tide waters, is derived directly or indirectly from the government,* and held subject to those general regulations, which are necessary to the common good and general welfare. Rights of property, like all other social and conventional rights, are subject to such reasonable limitations in their enjoyment, as shall prevent them from being injurious, and to such reasonable restraints and regulations established by law, as the legislature, under the governing and controlling power vested in them by the constitution, may think necessary and expedient." (emphasis added)). For further discussion, see WOOD, *supra* note 22, at 311.

397 *See* GOBLE ET AL., *supra* note 393, at 64; WOOD, *supra* note 22, at 311; *see also* Nebbia v. New York, 291 U.S. 502, 505 (1934) (stating "neither property rights nor contract rights are absolute; for government cannot exist if the citizen may at will use his property to the detriment of his fellows").

398 GOBLE ET AL., *supra* note 393, at 75.

Richard Powell, a well-known property law scholar once observed, "[T]ime marches on towards new adjustments between individualism and the social interests."[399] Our present legal view of property rights developed in a brief era of abundant resources that are now rapidly vanishing. As the New Jersey Supreme Court explained, "[A]n owner must expect to find the absoluteness of his property rights curtailed by the organs of society. . . . The necessity for such curtailments is greater in a modern industrialized and urbanized society than it was in the relatively simple American society of fifty, 100, or 200 years ago." Professors Freyfogle and Goble surmise, "Should it appear that property law gives an owner power to cause harm in some way, then the time may have come for the law to change—as it has many times over the generations."[400]

Even without the public trust overlay, these settled principles of property law should give large industrial timber owners considerable pause. Their longstanding assumptions of permissible clear-cutting wildly overshot the inherent limit on property owners to do no harm, and now their expectations must adjust to an even more disruptive reality—that their harvest is a recognized source of carbon pollution and a key driver of the climate emergency.

The public trust principle adds to these canons of property law, actuated whenever private property boundaries either encompass public trust resources or when the landowner's activities substantially harm public trust resources located off the property. The public trust principle situates ecological obligation in a property rights frame.[401] It announces a *public property right* to prevent substantial impairment of a crucial trust resource. Such a public right tempers and constrains the private property rights that threaten crucial ecology. As the Court famously declared in *Georgia v. Tennessee*, "[T]he state has an interest independent of and behind the titles of its citizens, in all the earth and air within its domain. It has the last word as to whether its mountains shall be stripped of their forests and its inhabitants shall breathe pure air."[402]

The manner of carrying out the public's beneficial trust interest necessarily adjusts to the ownership context. On public land, the

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399 *Shack*, 277 A.2d at 306 (quoting RICHARD ROY POWELL, POWELL ON REAL PROPERTY 494–96 (Rohan 1970)).

400 GOBLE ET AL., *supra* note 393, at 63.

401 *See* Dunning, *supra* note 310, at 516 (describing the public trust doctrine as "a fundamental doctrine in American property law").

402 Georgia v. Tenn. Copper Co., 206 U.S. 230, 237 (1907).

sovereign retains full ownership of the land and resources on behalf of the public and manages both without claim of intervening private title. On private land, ownership remains vested in the titled owner, and that owner has the prerogative of managing the land and economically benefiting from it. Accordingly, while the public may hold property interests in trust resources (such as water, streambeds, air, and wildlife) located on, above, adjacent, or near private lands,[403] the sovereign's trust duty to protect trust resources from activities on private property is primarily exercised by government through regulation.[404] As the *Geer* Court stated, "[I]t is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to people of the state."[405] Notably in this regard, ecological regulation remains fundamentally different from social/economic regulation, which does not typically involve the people's beneficial interest in trust property.[406] The trust analysis must ask whether the ecological regulation of private property suffices to meet the fiduciary standards incumbent on the sovereign in its trustee role. The following discussion first explains the operation of public trust interests on private land and then addresses the unique situation of corporate timberland ownership in Oregon. Parts V and VI below takes up the more applied analysis of whether Oregon regulation of private forestlands suffices to carry out its trust obligations to the people.

1. The Hybrid Form of Title on Private Lands Holding Trust Resources

The starting point for trust analysis on private land is this: the state's power to define property and grant property rights in land and resources remains an attribute of sovereignty itself, one bounded by an

403 GOBLE ET AL., *supra* note 393, at 58 (describing the interface of "publicly owned animals [that] live on privately owned land").

404 *See* Ctr. for Biological Diversity v. FPL Grp., 166 Cal. App. 4th 1349, 1368 (2008) (explaining that outside the regulatory context, where a public trust servitude exists to restrain harmful activities on private land, a member of the public may be situated, as beneficiary of the trust servitude, to enforce it against a landowner). *See generally* Marks v. Whitney, 491 P.2d 374 (Cal. 1971).

405 Geer v. Connecticut, 161 U.S. 519, 534 (1896).

406 *See* discussion at WOOD, *supra* note 22, at 127–28. Regulation in the socioeconomic realm is carried out pursuant to the sovereign's police power and is not judged by fiduciary standards. By contrast, regulation to protect public trust resources must carry out sovereign trust obligations and meet fiduciary standards of care. *Id.*

inalienable duty to protect the public trust.[407] From its inception, American public trust jurisprudence formed what Professor Michael Blumm terms a doctrinal "accommodation" of public and private property rights—one that both protects the public's property interests in trust resources and affirms a titled landowner's rights in the property.[408] Where crucial resources for society exist on private land, a public property right remains necessary because of the obvious subversion of the trust that would exist if property owners could claim unfettered property rights to destroy all lands and resources within their deeded boundaries. Water, for example—widely deemed a public trust asset—would be fully monopolized as it passes over private land were it not for the ownership of water vesting in the state as trustee for the people.[409] But at the same time, it must be emphasized that an accommodation by no means forecloses most benefits of private property ownership. The public trust is decidedly utilitarian in its objective and supports economic activity (as implicit in the traditionally recognized trust interests of fishing, navigation, and commerce).[410] A landowner encounters firm bounds in the prohibition against "substantial impairment" of trust resources (or public access to them)[411] and short of that, the public trust poses no barrier.

The doctrinal accommodation began in the context of streambeds along navigable waters, which were key to core pursuits of nineteenth-century society. In *Illinois Central Railroad v. Illinois*, a seminal public trust case, the Supreme Court recognized that navigable waters, as well as their underlying streambeds, are held in trust by the sovereign and cannot be freely conveyed to private parties because they are crucial to fishing, navigation, and commerce.[412] In that case, the Illinois Legislature had granted the entire shoreline of Lake Michigan to a private railroad company. Recognizing the shoreline's "immense value

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407 *See generally* WOOD, *supra* note 22. *See also* Blumm, *The Public Trust Doctrine and Private Property: The Accommodation Principle*, 27 PACE ENV'T L. REV. 649 (2010).

408 *See generally* Blumm, *supra* note 407.

409 *See* Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 723 (Cal. 1983) (noting "continuing power of the state as administrator of the public trust, a power which extends to the revocation of previously granted rights"); *In re* Water Use Permit Applications, 9 P.3d 409, 453 (Haw. 2000) (state empowered "to revisit prior diversions and allocations, even those made with due consideration of their effect on the public trust"); WOOD, *supra* note 22, at 188–207.

410 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 452 (1892).

411 Esplanade Props. v. City of Seattle, 307 F.3d 978 (9th Cir. 2002). As Section V.A.5 explains, industrial landowners who have committed substantial impairment may be liable for natural resource damages to fund the resource recovery.

412 *Ill. Cent. R.R.*, 146 U.S. at 455–56.

to the people of the state of Illinois," the Court held, "A grant of all the lands under the navigable waters of a state has never been adjudged to be within the legislative power." The Court found the conveyance revocable without compensation because the initial conveyance was invalid as beyond the sovereign's power as trustee of crucial public assets.[413]

Where the sovereign has already conveyed trust property into private hands, the law has recognized a defined sphere of public ecological rights in such privately held property, thus accomplishing the "accommodation" between the public's legitimate property rights and the private property owner's rights. Black letter law across the United States holds that an owner of streambeds along navigable waters does not possess classic full title below the high-water mark.[414] Rather, the title is described as a combination of *jus privatum* (the private rights of the landowner) and *jus publicum* (the rights of the public).[415] An early Oregon Supreme Court case recognized such public ownership rights in navigable water flowing over private property. In *Guilliams v. Beaver Lake Club*, the court explained, "Whatever may be the title to the bed of such stream or bodies of water . . . [private riparian landowners] do not own the water itself, but only the use of it as it flows past their property."[416] Later, in *Luscher v. Reynolds*, the Oregon Supreme Court reaffirmed that proposition, upholding the public's "paramount" right to recreate in Blue Lake—a lake with privately owned submerged lands.[417] Announcing a "broad and comprehensive meaning" of public rights on waterways, the *Luscher* Court stated, "To hand over all these lakes to private ownership, under any old or narrow

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413 *Id.* at 455 ("Any grant of the kind is necessarily revocable, and the exercise of the trust by which the property was held by the state can be resumed at any time.").

414 *See* BLUMM & WOOD, *supra* note 25, at 13 (excerpting DAVID C. SLADE, PUTTING THE PUBLIC TRUST DOCTRINE TO WORK: THE APPLICATION OF THE PUBLIC TRUST DOCTRINE TO THE MANAGEMENT OF LANDS, WATERS AND LIVING RESOURCES OF THE COASTAL STATES (2d ed. 1997).

415 *See* BLUMM & WOOD, *supra* note 25, at 11. ("Both public and private property uses often coexist in the same tract. The public's jus publicum combines with the private jus privatum to make up 'title' to the tract."); *see also id.* at 17–18 (explaining interaction of jus publicum and jus privatum). The early Supreme Court case, *Shively v. Bowlby*, 152 U.S. 1, 13 (1894), traced the dichotomy back to English common law and explained, "that this title, *jus privatum*, whether in the King or in a subject, is held subject to the public right, *jus publicum*, of navigation and fishing." *Id.*

416 Guilliams v. Beaver Lake Club, 175 P. 437, 441 (Or. 1918).

417 Luscher v. Reynolds, 56 P.2d 1158, 1162 (Or. 1936).

test of navigability, would be a great wrong upon the public for all time, the extent to which cannot, perhaps, be now even anticipated."[418]

Courts have developed a detailed set of rules to determine the appropriate interaction of these public and property interests. Loosely speaking, the public's *jus publicum* property right in a privately owned streambed becomes either an implied easement or a servitude on the private title, or in some cases, both.[419] The *easement* safeguards public access for trust purposes—fishing, navigation, commerce, and (as later recognized) recreation. As the Washington Supreme Court said, "[T]he public has the right to go where the navigable waters go, even though the navigable waters lie over privately owned lands."[420] At minimum, the owner has no right to block public use of waters, tidelands, or streambeds below the mean high-water mark. Courts such as the Oregon Supreme Court and the New Jersey Supreme Court have recognized public access rights in privately owned upland dry sand ocean beaches as well.[421] The *servitude* focusses on protection of traditional trust resources (as opposed to access to them). It safeguards the public's interest in these resources by limiting the private owner's ability to "substantially impair" the resource.[422] The servitude manifests in several cases prohibiting owners of shoreline property from filling tidelands in a way that would interfere with public trust purposes.[423]

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418 *Id.* (quoting Lamprey v. Metcalf, 53 N.W. 1139, 1143 (Minn. 1893)).

419 WOOD, *supra* note 22, at 328–29; BLUMM & WOOD, *supra* note 25, at 39 ("According to Professor Sax, some natural resources have public rights attached to them, restricting governments from privatizing all property rights associated with them. These public rights represent a kind of sovereign easement or servitude, imposing limits on private ownership, at least restricting the uses to which these resources may be put and, in some cases, resisting privatization altogether."). Where mobile public trust resources like fish, water and wildlife exist on or cross private property, the titled owner has no inherent *jus privatum* right to exploit them to any degree. It is beyond cavil that title to those resources is wholly held by the sovereign, separate and severable from the title to the underlying land.

420 Wilbour v. Gallagher, 462 P.2d 232, 238 (Wash. 1969).

421 Lew E. Delo, *The English Doctrine of Custom in Oregon Property Law:* State Ex Rel Thornton v. Hay, 4 ENV'T L. 383, 407 (1973). The Oregon Supreme Court found public access rights in the doctrine of custom, but that doctrine is best understood as one branch of the public trust doctrine. *See* WOOD, *supra* note 22, at 158–59 (discussing doctrine of custom as a public trust principle).

422 Esplanade Props., LLC v. City of Seattle, 307 F.3d 978, 485 (9th Cir. 2002); *see also* Marks v. Whitney, 491 P.2d 374, 380 (Cal. 1971) (recognizing "servitude" on tidelands preventing fill).

423 *Esplanade*, 307 F.3d at 987; *Whitney*, 491 P.2d at 378; *see also* Orion Corp. v. State, 747 P.2d 1062, 1072–73 (Wash. 1987) (observing, in the context of a landowner's regulatory takings claim, that the public trust "resembles 'a covenant running with the land

The servitude concept warrants further exploration in the context of large industrial forests of Oregon that encompass substantial, ecologically crucial acreage lying outside the envelope of traditional PTD protection attaching to streambeds. The matter of geographically extending the servitude beyond the streambeds and waterways came before the Wisconsin Supreme Court in *Just v. Marinette County*, which held that the wetlands located on private property in that case were "a necessary part of the ecological creation" and integral to the navigable waters that were protected under the trust.[424] That court announced what became known as a "natural use" interpretation of the public trust, stating:

> An owner of land has no absolute and unlimited right to change the *essential natural character* of his land so as [to] use it for a purpose for which it was unsuited in its natural state and which injures the rights of others. . . . This is not a case where an owner is prevented from using his land for natural and indigenous uses. The uses consistent with the nature of the land are allowed.[425]

Forests bear analogy to wetlands in that they too hold an "essential natural character" which, when destroyed, unleashes pollution and other harm to society.[426] The forests remain ecologically affixed to the waters, streambeds, air, fish, and wildlife—all traditional trust assets that inherently or situationally occur within, or abut, the private boundaries. The massive leveling of forest harms these trust resources occurring within, over, or near the titled private property boundaries and, more fundamentally, unravels the natural systems sustaining the state's commonwealth. The concept of a public trust servitude extending across the forest estate located on private industrial

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(or lake or marsh or shore) for the benefit of the public and the land's dependent wildlife,'" and determining that, "at the time it purchased its tidelands, Orion could make no use of the tidelands which would substantially impair the trust").

424 Just v. Marinette Cnty., 201 N.W.2d 761, 768 (Wis. 1972).

425 *Id.* (emphasis added); *see also* Palazzolo v. Rhode Island, 533 U.S. 606, 607 (2001); BLUMM & WOOD, *supra* note 25, at 159–96, 181 (discussing application of the public trust doctrine to wetlands on private property).

426 *Just*, 201 N.W.2d at 768. In dicta, the *Just* court distinguished forest harvest from wetlands destruction, noting that the former represented a natural use of the land. But the court did not probe the question in any detail, and, because its analysis turned on the harm effectuated by destroying wetlands, plausibly the same court would have found clear-cutting and other intensive practices (such as those carried out on Oregon industrial forests) not a "natural use" of the land because of the scathing harm they cause to multiple public trust resources. More in keeping with allowable "natural use" would be the selective harvest practices characteristic of many small woodlands owners.

timberlands will likely gain increasing attention as the activities on that property become ever more untenable from the public's perspective.

In the United States, much of the modern caselaw interpreting the public trust/private property interface arises in the context of the Fifth Amendment, which provides that no private property be taken for public use without just compensation.[427] Private property owners resisting regulation often turn to the Fifth Amendment to argue that a regulation has gone too far and amounts to an unconstitutional taking of private property by precluding uses pursued by the owner. The need for much more stringent restrictions on private forestland in Oregon will likely trigger analysis of the Fifth Amendment. Also, as noted earlier, Oregon has a regulatory takings law (Measure 49) that provides compensation opportunity for regulated owners of forestland.[428] While a full-fledged regulatory takings analysis lies beyond the scope of this Article, it is important to contextualize any takings claims in the public trust framework.

Courts assessing takings claims with respect to property below the high water mark along navigable waterways have characteristically denied such claims on the ground that the private property owner never gained the rights to interfere with the public's trust ownership (known as *jus publicum*) in the first place (whether that *jus publicum* takes the practical form of an easement, or servitude, or both).[429] In the landmark *Lucas v. South Carolina Coastal Council* case, the U.S. Supreme Court made clear that there can be no regulatory taking of private property when a "logically antecedent inquiry" shows that the landowner's proposed use was "not part of his title to begin with."[430] As the Oregon Supreme Court declared in *Stevens v. City of Cannon Beach*, a case in which beachfront owners challenged a state law allowing public access along the dry sand across their property, "[E]xclusive use of the dry sand areas was not part of the 'bundle of rights' that they acquired . . . plaintiffs have never had the property interests that they claim were

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427 U.S. CONST. amend. V.

428 Measure 49 provides compensation to timberland owners for a wide realm of restrictions. *See supra* Section II.D. Evaluated *infra* Section VII.C, this measure undermines the state's sovereign duty to protect public trust assets and therefore has questionable constitutional legitimacy.

429 *See* Esplanade Props., LLC v. City of Seattle, 307 F.3d 978, 987 (9th Cir. 2002); Orion Corp. v. State, 747 P.2d 1062, 1072–73 (Wash. 1987); *see also* BLUMM & WOOD, *supra* note 25, at 9–11.

430 *See* WOOD, *supra* note 22, at 332 (quoting Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1027 (1992)).

taken by [government's] decisions and regulations."[431] The public trust doctrine thus often manifests as a firm defense to a regulatory takings claim.[432]

Notably, in several other nations, courts have explicitly recognized a duty inherently incumbent on private property owners to protect ecological trust assets, including forests. The difference is a matter of angle. While in America, the trust serves as a limit on an individual's property right, in these other nations, it is an obligation inherent in private title. In Hungary, for example, the Constitutional Court stated, "[T]he unfettered discretion of forest owners and managers in exploiting the forests' resources shall be replaced by a constitutional obligation of responsible, sustainable management, and to use forests in a way which accommodates the interests of future generations."[433] As that court reasoned, "[The] monetary interests of forest owners and managers cannot prevail over the imperative of preserving the forest for future generations."[434] Similarly, the Supreme Court of India, in a landmark public trust opinion, declared:

> Today, every person exercising his or her right to use the air, water, or land and associated natural ecosystems has the obligation to secure for the rest of us the right to live or otherwise use that same resource or property for the long term and enjoyment by future generations.[435]

The preceding discussion brings into focus several takeaway points pertaining to the context of privately owned industrial forests in Oregon[436]:

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431 Stevens v. City of Cannon Beach, 854 P.2d 449, 456–57 (Or. 1993).

432 Blumm, *supra* note 407, at 649, 650 n.4; *see also* WOOD, *supra* note 22, at 312 (concluding that existing public trust rights can form "an absolute defense to any takings claim"). The court in *Esplanade* made clear that the public trust, existing since statehood, forms a preexisting restriction that can defeat a takings claim even if its reflection in statutory law was recent. *See Esplanade Props.*, 307 F.3d 978. Moreover, equally relevant to the forest context, a property owner cannot claim a regulatory taking for being prohibited from engaging in what the common law would define as a nuisance. Lucas v. S.C. Coastal Council, 505 U.S. 1003 (1992). Categorically, the logging on large private industrial forestlands should trigger a background nuisance inquiry in a takings analysis.

433 Katalin Sulyok, *The Public Trust Doctrine, the Non-Derogation Principle and the Protection of Future Generations: The Hungarian Constitutional Court's Review of the Forest Act*, 9 HUNG. Y.B. INT'L L. & EUR. L. 359 (2021) (quoting from Decision No. 14/2020 (VI.9), AB, Reasoning [23]).

434 *Id.* (quoting from Decision No. 14/2020 (VI.9), AB, Reasoning [31]).

435 BLUMM & WOOD, *supra* note 25, at 457 (quoting Fomento Resorts & Hotels v. Minguel Martins, 1 N.S.C 100 (India 2009) (emphasis added)).

436 Notably, this discussion does not analyze the operational public trust principles on small woodland lots. While the general principles apply, the practices of small woodland lot owners tend not to be destructive of public trust interests.

1. Some large private timberland owners have property immediately adjacent to one or both sides of a navigable waterway—unquestionably a public trust asset. Where private activities affect the public's beneficial use of such waterways (e.g., for fishing, navigation, recreation, and boating), there is a duty on the part of the state to restrict such private activities so that they do not substantially impair the public's trust property rights. The state's performance must be assessed by fiduciary standards owed to the public beneficiaries.
2. Regulation of private timberland activities will trigger regulatory takings claims, but whether those succeed should depend in part on public trust analysis. A landowner never gains the right to interfere with antecedent public trust ownership interests—it was not part of the title to begin with. More broadly, under basic principles of property law, a landowner has no right to cause substantial harm that rises to the level of a public or private nuisance.
3. Under the public trust doctrine established by various courts, a form of ecological servitude precludes landowners from damaging public trust assets.[437] Where evidence indicates that clear-cutting and other intensive forestry activities interfere with and harm the public's ownership rights in navigable waterways downslope or downstream, a compelling argument exists that a trust servitude extends to limit such forest-tributary harm. The same logic would compel limits on industrial forestry practices that threaten other public trust resources such as fisheries, wildlife, air, and the climate system—as those become recognized by courts.
4. As property law principles adjust to the exigencies of modern ecological peril, a principle of natural use and/or a broad notion of individual landowner responsibility may continue to steer the law in ways that draw public trust concepts out to a fuller geographic range. As biodiversity and drinking water sources—both key to human survival—gain recognition as core public trust interests, the scope of resources in the *res* must expand to secure those interests consistent with a zone of actual ecological

[437] Certainly, this servitude applies to navigable waterways in Oregon. The scope of the public trust *res* in many other states includes non-navigable tributaries, wildlife, air, fisheries, and other resources. See discussion *infra* Part IV. As these crucial resources gain trust protection, private timberland activities that harm such resources will be scrutinized for violation of the substantial impairment standard of protection. *See supra* Section III.C.

> impact. Timberland owners in a watershed should expect increasing legal pressure against their harmful activities that affect the public's use of any crucial natural resources. As other states increasingly broaden public trust protection to groundwater and drinking water sources (despite non-navigability) as well as wildlife and biodiversity, and as climate harm grips the nation in unprecedented ways, Oregon timberland owners may foresee that the past accommodation struck between private and public property interests will likely shift toward increased restrictions on their damaging activities.

Notably, community groups have equipped themselves with data and mapping to bring these points into a factual context, and—potentially—to hold large industrial timber corporations accountable for the ecological destruction wrought by massive clear-cutting on local communities. The Coast Range Association, for example, has produced maps of private timberland ownership throughout the Oregon Coast Range, with several showing ownership abutting or encompassing navigable waterways.[438] With additional geographic information system layering, resources such as drinking water sources, tributaries to navigable waterways, streambeds, and fish and wildlife habitat can readily be depicted, enabling citizens and their lawyers to connect activities on private land with substantial impairment of public trust assets.

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[438] Waters are considered navigable for purposes of the public trust doctrine in Oregon if, at statehood in 1859, "they are used, or are susceptible of being used, in their ordinary condition, as a highway for commerce, over which trade or travel are or may be conducted in the customary modes of trade and travel on water." The Daniel Ball, 77 U.S. 557, 563 (1870) (cited in Utah v. United States, 403 U.S. 9, 10 (1971)). Navigability determinations for the 13th District of the U.S. Coast Guard (in Oregon) are posted at 11-K-1 Navigability and Jurisdictional Determinations, U.S. COAST GUARD, http://www.fishsafewest.Info/PDFs/d13NavWaters.pdf [https://perma.cc/R78T-RY67]. For example, Greenwood Resources in Clatsop County owns 145,304 acres straddling both sides of the Necanicum River, a navigable waterway. Coast Range Association, *Clatsop County Land Ownership* (2020), https://coastrange.org/wp-content/uploads/2021/04/Clatsop-01.png [https://perma.cc/FZ4K-4CZT]. Notably, however, in a recent Oregon case dealing with a navigability determination on Lake Oswego, a judge weighed evidence of native use prior to statehood to determine navigability. *See* Kramer v. City of Lake Oswego, 446 P.3d 1 (Or. 2019) (noting native use of shallow-draft canoes on the applicable waterway). That approach, by expanding the evidence of navigability, may enlarge the envelope of public trust doctrine waters. *See also Documenting Forest Ownership in Oregon*, COAST RANGE, https://coastrange.org/challenging-wall-street-forestry/ownership/ [https://perma.cc/HBA5-ZR3J] (mapping ownership in the coastal counties of Western Oregon).

2. The Special Case of Corporate Ownership of Forest Property

Modern corporate ownership of private land is worthy of additional note. Most corporations are managed to maximize profit to the exclusion of social well-being, and some may work so much ecological destruction that they become a menace to society. The Founders worried greatly about the power of corporations; because they never die as natural beings do, corporations simply continue to aggregate power beyond normal human limits.[439] Abraham Lincoln famously warned, "Corporations have been enthroned [and] an era of corruption in high places will follow . . . until all wealth is aggregated in a few hands and the Republic is destroyed." In the forest context, new corporate forms such as REITs and TIMOs dominate industrial forestry, holding allegiance to distant boards of directors and shareholders rather than to the public and local communities.

Generally speaking, a corporate structure (or other state-approved business form) involves a second layer of relationship with the state beyond the property relationship, as the entity cannot exist without state approval. Corporations exist purely at the will of the people, and corporate charters may be (and on occasion have been) revoked in cases of corporate malfeasance or compelling public interests.[440] Under public trust theory, because the state cannot abrogate its trust responsibility to the people, it can give no more power to a corporation—a creature of the state—than the state itself gained from the people. Thus, in theory (if not yet in caselaw) there exists a fiduciary limit on corporations inherent in their charters to protect the public trust in crucial resources owned by the corporation, though the explicit idea of a *fiduciary corporation* has not yet surfaced in American litigation.[441] The possibility of an inherent corporate public trust responsibility to protect ecology parallels the international trend of imposing responsibility directly on property owners to protect ecology.[442] Against a history marked by corporate destruction of once-vast ancient forests that will "take centuries to repair,"[443] Oregon provides a compelling context for exploring new frontiers of corporate responsibility. Part IV below turns to the scope of public trust assets

439 For further discussion, see WOOD, *supra* note 22, at 299.

440 *Id.* at 304.

441 *Id.* at 306.

442 *See infra* note 532 and accompanying text.

443 *See* DURBIN, *supra* note 100, at 18 ("The ecological effects of logging practices here and on steep slopes across the Pacific Northwest will take centuries to repair.").

and makes the case that forest resources, existing anywhere, are justifiably part of the public trust endowment.

IV
THE FOREST AS A TRUST ASSET

The trust *res* consists of assets held in the trust, designed to serve the trust's purpose and requiring protection so as to meet that purpose when the time comes. Private trusts hold financial assets like stocks and bonds. The *res* of a public trust consists of ecological assets, natural wealth that must sustain all foreseeable future generations of humanity. It amounts to humanity's survival account—the only one it has.

Government trustees must protect trust resources for the benefit of present and future generations. Cleaving any category of natural resource from the trust endowment leaves it open to destruction for profit. As the Supreme Court of India remarked in a landmark public trust case: "Historically, and all across the globe, predatory forms of capitalism seem to organize themselves, first and foremost, around the extractive industries that seek to exploit the vast, but exhaustible, natural resources. Water, forests, minerals and oil—they are all being privatized; and not yet satisfied, the voices that speak for predatory capitalism seek more."[444]

The public trust concepts could provide much needed grounding to Oregon's forest management, anchoring sovereign obligations in clear fiduciary duties serving the beneficiary public. As first elaborated by the old cases, the antebellum scope of the *res* extended to submerged lands and overlying waters along navigable waterways.[445] Putting aside the restrictive *Chernaik* ruling in Oregon,[446] the doctrine has elsewhere expanded far beyond its original scope.[447] As the Supreme Court of New Jersey announced, in words that find reflection in many other cases as well, "[W]e perceive the public trust doctrine not to be 'fixed or static,' but one to 'be molded and extended to meet changing conditions and needs of the public it was created to benefit.'"[448]

Two approaches drive this expansion on the national and global level. First, the public trust protects the interests of the citizen

444 WOOD, *supra* note 22, at 143.

445 BLUMM & WOOD, *supra* note 25, at 8 (quoting case).

446 Chernaik v. Brown, 475 P.3d 68, 72 (Or. 2020) (recognizing only "submerged and submersible lands," as well as navigable waters, as part of the public trust).

447 BLUMM & WOOD, *supra* note 25, at 8.

448 Raleigh Ave. Beach Ass'n v. Atlantis Beach Club, Inc., 879 A.2d 112, 121 (N.J. 2005) (quoting Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355, 365 (N.J. 1984)).

beneficiaries and attaches to resources of "public concern."[449] Courts over time have greatly expanded the set of public needs that require protection of supporting ecology.[450] Second, courts increasingly recognize that traditional public trust assets, like streambeds, fisheries, and navigable waters, do not exist isolated on their own but are inextricably connected with other resources such as air, groundwater, forests, wetlands, and such.[451] Protection of the traditional asset remains futile without protection of these ancillary resources.

Under both rationales, forests clearly warrant public trust protection. President Clinton charted a new course for Pacific Northwest forests, long caught in the crosshairs of the region's timber wars, when he convened the Northwest Forest Conference in 1993 and announced that "we need to protect the long-term health of our forests, our wildlife, and our waterways. They are a . . . gift from God, and we hold them in trust for future generations."[452] While protection has come all too slowly in the United States, a growing set of judicial opinions in other nations expand public trust protection to forests. The examination below begins in Section IV.A. by applying the "public concern" test to forests and proceeds, in Section IV.B., to apply the "ancillary resource" approach to forests. Section IV.C inventories cases nationally and abroad that include forests within the trust *res*.

As a predicate to the discussion below, it is important to clarify the role of land ownership as it relates to whether a forest is subject to public trust protection. It is beyond question that all public lands—whether owned by the federal government, the state, or the counties—are held in public trust, for those sovereigns have no other way holding such property for the common good.[453] Cases are clear that the national

449 BLUMM & WOOD, *supra* note 25, at 343; *see also* discussion at *infra* note 606 and accompanying text.

450 *See* discussion *infra* Section IV.A.

451 *See* WOOD, *supra* note 22, at 160.

452 U.S. DEP'T OF AGRIC. & U.S. DEP'T OF THE INTERIOR, RECORD OF DECISION FOR AMENDMENTS TO FOREST SERV. & BLM PLANNING DOCUMENTS WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL 3 (1994) (quoting President Clinton's remarks at the Northwest Forest Conference held in Portland, Oregon on April 2, 1993).

453 *See, e.g.*, Pa. Env't Def. Found. V. Commonwealth, 161 A.3d 911, 916 (Pa. 2017) (finding state forestlands part of public trust corpus); Casey Jarman, *The Public Trust Doctrine in the Exclusive Economic Zone*, 65 OR. L. REV. 1, 11 (1986) (stating that one-third of the U.S. land base is held by federal government as public land in trust for the benefit of the citizens). For discussion of federal public trust ownership of federal lands, see BLUMM & WOOD, *supra* note 25, at 359–62.

forests and national parks are thus held in public trust,[454] as are state forested lands and parks.[455] With respect to these public lands, the issue is not whether the forest ecosystem on these lands is held in trust—it clearly is—but rather what the fiduciary duties are toward the beneficiary public, particularly when conflicting legitimate trust purposes emerge. That is the subject of Part V of this Article.

Private lands pose an altogether different context, as described in Section III.E. Here, the state's involvement is through its police power to regulate harmful activities on private property. Understanding the forest as having the characteristics of a public trust resource brings to bear a fiduciary paradigm within which government decision makers may be held accountable for their regulatory decisions. Without a fiduciary paradigm, as noted earlier, the prevailing framework is a political framework of compromise that tends to legalize ongoing destruction of Oregon's signature forests.

A. Forests as Resources of "Public Concern"

The trust works a decidedly utilitarian task. Courts look squarely to the needs of the public in defining the scope of the trust endowment. The essential framework for defining trust assets organizes around a test of "public concern" as set forth in *Illinois Central Railroad v. Illinois*. This seminal 1892 case involved the legislative conveyance of Chicago's waterfront to a private railroad company. At the time of the case, lakebeds served a vital role for fishing, navigation, and commerce, three primary occupations of a burgeoning society. Because of these public needs, the Court held that the legislature had no power to put the lakebed into private hands—it was an inalienable part of the people's sovereign trust, "freed from the obstruction or interference of private parties."[456] Explaining that the trust arises "necessarily from the public character of the property," the Court declared: "The ownership of the navigable waters of the harbor, and of the lands under them, is a subject of *public concern* to the whole people of the state."[457]

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454 *See* Sierra Club v. Dep't of Interior, 376 F. Supp. 90, 93 (N.D. Cal. 1974) ("The secretary [of the Department of the Interior] is the guardian of the people of United States over the public lands. The obligations of his oath of office oblige him to see that the law is carried out, and that none of the public domain is wasted or is disposed of to a party not entitled to it." (alteration in original)); Sierra Club v. Dep't of the Interior, 398 F. Supp. 284 (N.D. Cal. 1975). *But see* Sierra Club v. Andrus, 487 F. Supp. 443, 449 (D.C. Cir. 1980).

455 *See* BLUMM & WOOD, *supra* note 25, at 343–76; *see also* Big Sur Props. V. Mott, 62 Cal. App. 3d 99, 103 (1976) (holding that a park gained by state was held in public trust).

456 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 452 (1892).

457 *Id.* at 455–56 (emphasis added).

This historic passage reverberates through all public trust law. Where a natural resource is a "subject of public concern to the whole people," it warrants protection as an asset in the people's trust.[458] In applying the public trust to wildlife in California, the California Court of Appeals said, "They are natural resources of inestimable value to the community as a whole."[459] And as Professor Charles Wilkinson explains: "The public trust doctrine is rooted in the precept that some resources are so central to the well-being of the community that they must be protected by distinctive, judge-made principles."[460]

Courts must constantly refresh their understanding of "public concern" in order to determine the appropriate scope of the trust. As the Supreme Court of Hawaii emphasized, "the 'purposes' or 'uses' of the public trust have evolved with changing public values and needs."[461] To hold the doctrine static would render it increasingly irrelevant to the changing imperatives of society. As the Oregon Supreme Court stated long ago:

> The very essence of the common law is flexibility and adaptability. . . . If the common law should become . . . crystallized . . . it would cease to be the common law of history, and would be an inelastic and arbitrary code. . . . [O]ne of the established principles of the common law . . . [is] that precedents must yield to the reason of different or modified conditions.[462]

Responding to advances in scientific understanding and society's emerging requirements, many courts have readily expanded their conception of the trust *res*. Whereas the original cases highlighted the overriding public needs of fishing, navigation, and commerce (still known as the "traditional FNG" interests protected by the doctrine), various courts now recognize modern imperatives such as climate stability, biodiversity, drinking water, wildlife habitat, aesthetics, and recreation, and expand the *res* as necessary to protect those interests;[463] in many states, the doctrine also includes assets such as groundwater,

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458 *Id.* at 455. For discussion of the public concern test, see BLUMM & WOOD, *supra* note 25, at 343.

459 Ctr. For Biological Diversity, Inc. v. FPL Grp., 166 Cal. App. 4th 1349, 1363 (2008).

460 Charles F. Wilkinson, *The Public Trust Doctrine in Public Land Law*, 14 U.C. DAVIS L. REV. 269, 315 (1980).

461 *In re* Water Use Permit Applications (*Waiahole Ditch*), 9 P.3d 409, 448 (Haw. 2000).

462 *In re* Hood River, 227 P. 1065, 1086–87 (Or. 1924). While the quote pertains to common law, it has equal bearing on the court's development of "constitutive" common law under the public trust. *See* WOOD, *supra* note 22, at 145 ("Reflecting constitutional character bound in an attribute of sovereignty, judicial iterations of the public trust amount to rare constitutive common law.").

463 *See* discussion at WOOD, *supra* note 22, at 143–64.

wetlands, dry sand beaches, and non-navigable waterways.[464] In these cases, the trust *res* and the societal interests it serves remain inextricably connected, as the conjoined twins of public trust law.

Long ago, the Oregon Supreme Court announced its approach of construing the public trust to accommodate emerging public needs. In *Guilliams v. Beaver Lake Club*,[465] the court extended the trust well beyond the traditional fishing, navigation and commerce realm to recreational uses, including "sailing, rowing, fishing, fowling, bathing, [and] skating," and likewise broadened the geographical scope of the public trust doctrine beyond waters meeting the traditional navigability test to include all waterways capable of recreational boating.[466] Adopting an approach that advanced with society itself, the *Guilliams* court emphasized that the scope of public rights was elastic and encompassed other public uses "*which cannot now be enumerated or even anticipated*."[467] Thus, *Guilliams* long ago made clear that Oregon's public trust doctrine was not static.

An even more sensible approach is to recognize a full *ecological res*.[468] Because resources cannot simply be sliced out of the ecosystems of which they are a part, a holistic view of full ecosystems as resources of "public concern" remains far more consistent with scientific reality than an approach that artificially atomizes ecosystems into discrete resources (like forest, wildlife, and water), incrementally admitting them, one by one, into the ambit of trust protection.[469] The nation's

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464 Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 719–21 (Cal. 1983) (non-navigable tributaries); Baxley v. State, 958 P.2d 422, 434 (Alaska 1998) (wildlife); Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355, 358 (N.J. 1984) (dry sand area); Robinson v. Ariyoshi, 658 P.2d 287, 310 (Haw. 1982) (groundwater); Just v. Marinette Cnty., 201 N.W.2d 761, 768–70 (Wis. 1972) (wetlands); *cf.* Chernaik v. Brown, 475 P.3d 68, 78 (Or. 2020) ("Indeed, from the earliest days of the doctrine in this country, the public trust doctrine has evolved in response to different circumstances and society's changing needs.").

465 Guilliams v. Beaver Lake Club, 175 P. 437 (Or. 1918).

466 *Id.* at 442.

467 *Id.* (quoting Lamprey v. Metcalf, 53 N.W. 1139, 1143 (Minn. 1893)) (emphasis added). That court helped lead other courts to adopt the "pleasure-boat test" for navigable waters, now the dominant state rule today. *See also* HARRISON C. DUNNING, WATER AND WATER RIGHTS, *Waters Subject to the Public Right*, § 32.03 (Amy L. Kelley ed., 3rd ed. 2014).

468 WOOD, *supra* note 22, at 149 (originating the concept of ecological *res*).

469 *See id.* at 148, criticizing the incremental judicial approach:

> In this vacuous judicial theater, the natural resources auditioning for the trust appear on stage in painfully slow order. And yet a full cast waits behind the curtains, brilliantly choreographed according to Nature's laws. The problem here

governors made no understatement when, convened by President Roosevelt in 1908, they declared that "the perpetuity of the Nation itself rests" on its natural resources.[470] In some judicial and state statutory iterations of the trust, the protection sensibly reaches to nearly all natural resources.[471] And in a pending case brought in 2018 by the state of Oregon against Monsanto Company for pervasive pollution from PCBs, the state argued that it in fact held all natural resources in trust:

> The State holds in trust for the public the bed and banks, and waters between the bed and banks, of all waterways within the State. By virtue of its public trust responsibilities, all such lands are to be preserved for public use in navigation, fishing, and recreation. The State is also the trustee of all natural resources—including land, water, wildlife, and habitat areas—within its borders. As trustee, the State holds these natural resources in trust for all Oregonians—preserving, protecting, and making them available to all Oregonians to use and enjoy for recreation, commercial, cultural, and aesthetic purposes.[472]

Incorporating modern interests in the "public concern" test, Oregon forests clearly meet the measure of a public trust resource. As described above in Part I, forests are crucial to the state's modern needs of drinking water, food supply, biodiversity, fish and wildlife habitat, recreation, scenery, air quality, and climate stability. The Supreme Court of Hungary captured the value of forests to society in these words:

> The forest is the most complex natural (ecological) system on land [and] an essential condition for a healthy human life . . . . [T]he forest determines the nature of the landscape, helps to preserve biodiversity, makes the human environment more beautiful, comfortable and healthy, and produces energy and food as a constantly renewable

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is one of timing. The traditional approach of defining the trust *res* state by state, asset by asset, may not save the playhouse before it burns down. Even if all natural assets that remain unquestionably crucial to society ultimately find expression in the courts, the lapse of protection in the meanwhile hazards irrevocable loss. Industries will exploit judicial silence to their advantage.

470 Theodore Roosevelt, Declaration of the Conference of Governors (May 15, 1908).

471 *See, e.g.*, Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911, 931 (Pa. 2017) (interpreting Article 1, § 27 of the state constitution declaring a public trust over "Pennsylvania's public natural resources" expansively, noting that prior legislative drafts of the amendment iterated specific resources (such as air, waters, fish, wildlife, and the public lands) but was rejected to "discourage courts from limiting the scope of natural resources covered." (citing Pa. L. Journal, 154th Gen. Assemb., No. 118 Reg. Sess., 2274 (1970) (analysis of Professor Robert Broughton)).

472 Chernaik v. Brown, 475 P.3d 68, 80 (quoting Complaint at 5 ¶ 10, State v. Monsanto Co., 18-cv-00540 (Or. Cir. Ct. Jan. 4, 2018) (emphasis added)).

> natural resource. For all these reasons, the maintenance and preservation of the forest is in the interest of the state and society as a whole, and its protection and public welfare services belong to all people; therefore the forest can only be used in a manner regulated in accordance with the public interest.[473]

Absolutely paramount today, these forests provide irreplaceable reservoirs of carbon and thus fulfill an essential role in climate stability and future atmospheric recovery. At this moment when humanity faces climate tipping points—capable of triggering runaway planetary heating—protecting Oregon's remarkable "lungs of the planet" becomes necessary for the most basic "public concern" of all—human survival.

B. Forests as Ancillary Resources

Perceptive courts understand the futility of protecting traditional trust assets without extending trust protection to their supporting ecology as well. These courts will broaden the scope of public trust protection to resources serving an ancillary function to an already recognized public trust asset.[474] The Supreme Court of New Jersey invoked this reasoning when it extended the public trust doctrine upland from its traditional realm below the high-water mark. Public trust rights to access the dry sand were found "ancillary to the public's right to enjoy the tidal lands."[475] The court explained: "Reasonable enjoyment of the foreshore and the sea cannot be realized unless some enjoyment of the dry sand area is also allowed. The complete pleasure of swimming must be accompanied by intermittent periods of rest and relaxation beyond the water's edge."[476] Likewise, the Supreme Court of California extended the public trust doctrine to non-navigable waterways that had a clear hydrological connection with traditional navigable waters, and it later extended protection to groundwater that fed navigable waters.[477]

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473 Comm'r for Fundamental Rts., Case II / 00201/2019, Para. 23 (Const. Ct. 2020) (Hung.), *translated by* Google Translate.

474 *See infra* notes 477, 481.

475 Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355, 358 (N.J. 1984).

476 *Id.* at 365.

477 Env't L. Found. V. State Water Res. Control Bd., No. 34-2010-80000583, 2014 WL 8843074, at *6 (Cal. Super. Ct. July 15, 2014) (declining to find groundwater a public trust asset but extending public trust protection to prevent "navigable waters from harm caused by extraction of groundwater, where the groundwater is so connected to the navigable water that its extraction adversely affects public trust uses[]").

As science increasingly reveals the ecological connections that have existed all along, more courts recognize the absurdity of categorizing resources separately. In finding the atmosphere protected by the public trust, a Washington court declared, "The navigable waters and the atmosphere are intertwined and to argue a separation of the two, or to argue that [greenhouse gas] emissions do not affect navigable waters, is nonsensical."[478] In a similar vein, the Supreme Court of Hawaii held that the public trust *res* includes both groundwater and water—indeed, "all water resources without exception or distinction."[479] Emphasizing that the trust demands "maintenance of ecological balance," the court reasoned, "Modern science and technology have discredited the surface-ground dichotomy."[480] Similarly, the federal district court in *Juliana v. United States* found public trust protection for the climate system without deciding whether the atmosphere itself was a public trust asset. Identifying the inherent connection between the atmosphere and traditionally recognized public trust resources, the court said, "it 'misses the point' to mechanically rely on what has been identified as a public trust asset in the past."[481]

The same logic should confer trust protection to forested areas which are indisputably ancillary resources necessary to the protection of traditional public trust resources—fish and wildlife, streambeds, waterways, and ocean margins. Much of the undisputed blame for the deteriorated condition of Oregon's fisheries falls on the forest managers and timber companies that carried out clear-cutting on steep slopes—causing landslides, warming waters, and damaged riparian areas needed by fish.[482] An appropriate approach to forest protection would proceed not on the basis of property boundaries but rather on the basis of *watershed* boundaries. This approach has been recognized as far back as 1968 when Congress, in establishing Redwood National Park, explicitly directed the Secretary of the Interior to protect the

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478 Foster *ex rel.* Foster v. Wash. Dep't of Ecology, No. 14-2-25295-1 SEA, 2015 WL 7721362, at *4 (Wash. Super. Ct. Nov. 19, 2015).

479 *In re* Water Use Permit Applications, 9 P.3d 409, 445 (Haw. 2000).

480 *Id.* at 458, 447.

481 Juliana v. United States, 217 F. Supp. 3d 1224, 1255 n.10 (D. Or. 2016) (quoting *Foster*, 2015 WL 7721362, at *4). The court found that climate protection flowed from the plaintiffs' interests in traditional ocean trust assets. *See id.* at 1256 ("Because a number of plaintiffs' injuries relate to the effects of ocean acidification and rising ocean temperatures, they have adequately alleged harm to public trust assets.").

482 *See* Complaint for Declaratory & Injunctive Relief at 14, Ctr. For Biological Diversity v. Daugherty, Case No: 6:18-cv-1035 (D. Or. June 13, 2018), https://www.biologicaldiversity.org/species/fish/coho_salmon/pdfs/Complaint-Coho-18-1035.pdf [https://perma.cc/P9Z3-NNLW].

entire watershed surrounding the park, recognizing that damage to the park's streams would occur by clear-cutting from outside the Park's boundaries.[483] In the very same way, protection of Oregon's traditional public trust resources requires protection of the upland and adjacent forest. Not surprisingly, a number of international decisions recognize the vital connection between forests and other resources.[484]

C. Legal Recognition of a Forest Trust

1. The 1217 Forest Charter of England

Public use of forests as "*res communes*" has received distinct legal attention dating back to the Charter of the Forest, pressed upon the English Crown in 1217. As a companion document to the Magna Carta, it protected the commoners' forest uses against royal monopoly, dominion, and infliction of punishment.[485] Professor Nicholas Robinson provides an illuminating analysis of this much overlooked decree, concluding that the Charter "advances ordered liberty through clarifying everyone's rights in royal forests."[486] At the time, the commoners' survival was dependent on the forest in basic ways—for shelter; hunting; pasturing; and gathering berries, herbs, honey, and firewood supply: "medieval society lived on and amidst the wider ecological fruits of a shared countryside."[487] By securing protection for these uses, the Charter provided a "crucible" for a shared resource regime.[488] In guaranteeing "all the liberties and free customs" which

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483 *See* Sierra Club v. Dep't of Interior, 376 F. Supp. 90, 94 n.3 (N.D. Cal. 1974) (citing a 1968 House Committee Report stating that "damage may be caused to the margins of every park . . . [and] the streams within a park . . . if the land on the watershed above them is permitted to erode").

484 *See, e.g.*, Comm'r for Fundamental Rts., Case II / 00201/2019, Para. 24 (Const. Ct. 2020) (Hung.), *translated by* Google Translate ("The importance of forests is decisive from the point of view of nature protection," noting their crucial role in regulating climate and support of biodiversity.). *See also* discussion *infra* Section IV.C.3.

485 For a full analysis of the Charter of the Forest, see Nicholas A. Robinson, The Charter of the Forest: Evolving Human Rights in Nature, Address at The Lincoln Charter of the Forest Conference (Sept. 22–24, 2017), https://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=2073&context=lawfaculty [https://perma.cc/K2XK-ZX9U].

486 *Id.* at 2.

487 *Id.* at 5.

488 *Id.* at 7. Additionally, "The Charter embodies clearly stated, fair norms that sustained a just social order. The norms had the effect of sustaining ecosystems as well." *Id.* at 2–3.

the commoners formerly had, the Charter could also be seen as an early environmental human rights declaration, Robinson observes.[489]

While public interests in forests have certainly expanded since medieval England, the need for legal protection has remained remarkably steadfast, and the Forest Charter endures as a beacon in navigating a complex modern legal landscape. As described by Robinson, "It is a landmark in the quest for justice. The Charter demarcates an inter-generational struggle to evolve and apply norms for just relations with nature. We call this today the right to the environment."[490] The Forest Charter's singular attention to this vastly important ecological category, standing alongside the Magna Carta, provides an impressive historical foundation for including forestlands, wherever located, in the ambit of the public trust. Not unlike the medieval context that gave rise to the public need for secured forest liberties, today's trust must provide protection against private exploitative ambition that drives forest destruction.

2. International Legal Recognition of Forests as Planetary Trust Resources

An increasing number of international declarations and commitments recognize forests as planetary trust resources. The 2021 climate negotiations at the United Nations Climate Change Conference (COP 26) in Glasgow culminated in a global pact to protect forests.[491] Now signed by 145 nations (including the United States) that cumulatively represent over ninety percent of the world's forests,[492] the Declaration on Forest and Land Use covers over fourteen million square miles of forestland throughout the world. Countries pledged to halt and reverse forest loss and land degradation, emphasizing the vital roles of forests throughout the world to fight against climate disruption and maintain other important ecosystem services. Emphasizing the "critical and interdependent roles of forests of all types . . . in enabling the world to meet its sustainable development goals . . . [and] to adapt

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489 *Id.* at 10 ("The invocation of 'liberties' is deliberately expansive, which is characteristic of human rights. The door is left open [for] each generation to invoke its own reading what rights the government must ensure and observe.").

490 *Id.* at 2.

491 *Glasgow Leaders' Declaration on Forests and Land Use*, UNITED NATIONS CLIMATE CHANGE CONF. UK 2021 (Nov. 2, 2021), https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/ [https://perma.cc/48MT-8Y9C].

492 *Id.*

to climate change," the Declaration committed the signing parties to end net global forest loss by 2030.[493]

In 2020, the European Parliament adopted a resolution recommending an EU legal framework to halt and reverse EU-driven global deforestation, recommending that "ancient and primary forests should be considered and protected as global commons, and that their ecosystems should be granted a legal status."[494] Also in 2020, Northwest Territories government and the Canadian Government signed an agreement with the Łutsel K'e Dene First Nation to protect a forest ecosystem known as Thaidene Nëné.[495] Reflecting an approach that both recognizes the importance of ecological integrity and blends Indigenous rights, traditional ecological knowledge, and the well-being of future generations, the agreement states that the parties

> have a common desire that Thaidene Nëné be regarded with the highest degree of respect and be protected and managed for present and future generations of Łutsël K'e Denesǫłine, residents of the Northwest Territories and all Canadians; [and further] recognize that sharing responsibility for the management and operation of Thaidene Nëné, through the cooperation of the Parties to this Agreement, is mutually beneficial for the Government of the Northwest Territories and Łutsël K'e Denesǫłine, and is a tremendous opportunity to protect and present Thaidene Nëné so as to maintain its ecological integrity and the Denesǫłine way of life.[496]

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493 *Id.*

494 Resolution with Recommendations to the Commission on an EU Legal Framework to Halt and Reverse EU-Driven Global Deforestation, 2020 O.J. (C 404) 175, 189. The recommendation was directed to the EU Commission, which then passed its own proposal for a regulation on November 17, 2021. *Proposal for a Regulation of the European Parliament and of the Council on the Making Available on the Union Market as well as Export from the Union of Certain Commodities and Products Associated with Deforestation and Forest Degradation*, COM (2021) 706 final (Nov. 19, 2021), https://data.consilium.europa.eu/doc/document/ST-14151-2021-INIT/en/pdf [https://perma.cc/DDZ6-H4ZN]. Most recently, the European Council officially adopted a "general approach" to "limit consumption of products contributing to deforestation," including provisions such as mandatory due diligence rules, and a benchmarking system to track deforestation risks for "all operators and traders who place, make available, or export" a variety of natural and derived products. PARL. EUR. DOC. (ENV 618) 10284 (2022), https://data.consilium.europa.eu/doc/document/ST-10284-2022-INIT/en/pdf [https://perma.cc/8QX8-59UZ].

495 Agreement to Establish Thaidene Nene Indigenous Protected Area, Territorial Protected Area, and Wildlife Conservation Area Between Lutsel K'e Dene First Nation and the Government of Northwest Territories (Aug. 21, 2019) (Can.), https://www.enr.gov.nt.ca/sites/enr/files/resources/tdn_-_lkdfn_agreement_final_signed.pdf [https://perma.cc/FFA9-AEXZ].

496 *Id.*

3. Judicial Recognition of Forests as Trust Resources

As described below, many courts have expanded the ambit of trust protection to include forests. But notably, Oregon is not among them. To the contrary, the recent *Chernaik* ruling (described above in Section III.B.4) positions the judicially interpreted Oregon public trust as one of the most restricted in the nation. The court in that case refused to extend the doctrine beyond streambeds along navigable waters and the waters themselves (though an earlier case had affirmed the doctrine as it applies to wildlife, and the *Chernaik* court left that interpretation standing).[497] While acknowledging the relevance of interconnected ecology in a footnote,[498] the court said, "But the interconnectedness of natural resources within Oregon . . . does not mean that all natural resources, including the atmosphere, must be considered public trust resources under Oregon's public trust doctrine."[499] The court's reluctance fits this description:

> While many courts prudently modernize the public trust, some courts remain loathe to extend the trust *res* beyond its historic footprint. These courts have kept their analytical legs so planted in the submerged lands that they refuse to recognize any modern public interests; their antiquated approach has the [beneficiaries of the public trust] still fishing for their sustenance from submerged lands. This kind of time warp slows the law's response to the crises pounding at humanity's door in a new age that demands aggressive ecological recovery. When the public trust detaches from modern needs, it unmoors from its original purpose of protecting society.[500]

The *Chernaik* court at least made clear that it was not permanently foreclosing expansion of the Oregon public trust doctrine. Rather, it said, "We do not foreclose the idea that the public trust doctrine may evolve to include more resources in the future."[501]

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497 However, in a sleight of hand that offends the logic of the trust, the court described the wildlife trust doctrine as "separate and distinct" from the public trust doctrine. Chernaik v. Brown, 475 P.3d 68, 77 (Or. 2020) (discussing State v. Dickerson, 345 P.3d 447, 454 (Or. 2015)).

498 In a vague nod to California's *Mono Lake* and other cases that extended public trust protection to non-navigable waters and groundwater that affected traditional navigable waters held in trust, the court said, "We do not imply that a factual connection between a condition or activity affecting a natural resource and adverse effects on a recognized public trust resource is irrelevant." *Id.* at 81 n.7.

499 *Id.* at 81.

500 WOOD, *supra* note 22, at 146.

501 *Chernaik*, 475 P.3d at 82 ("However, we decline to . . . expand the resources included in the public trust doctrine well beyond its current scope."). In her dissent, Chief Justice Walters emphasized that "the majority does not foreclose such a declaration in another case." *Id.* at 84 (Walters, C.J., dissenting).

Future courts considering the scope of the Oregon public trust may take guidance from the growing body of decisions from other countries that impose public trust protection of crucial forest resources. While some courts may not use the precise term "public trust," all the cases discussed below emphasize the importance of forests for the welfare of present and future generations and endorse the concept of an endowment to be sustained by government—the hallmarks of a trust.

The discussion below surveys these decisions. Some are recent, arising out of grave concern over the climate emergency and the crucial role of forests in moderating atmospheric pollution. Many also relate the vitality of forests to the basic human condition, linking the ecosystem services and bounty they provide to cultures, religions, and livelihoods. And still others take the legal analysis a step further, recognizing legal personhood for forests or the broader ecosystems in which they are nested. All these judicial pronouncements have analogous bearing on the Oregon Forest Trust and, indeed, contribute to an emerging forest trust paradigm on the global level.

a. The Philippines

A trust framework for forests was indelibly set by the Philippines Supreme Court in a famous case decided in 1993, *Oposa v. Factoran*.[502] School children brought a class action suit challenging timber licenses issued by the nation's Department of Environment and Natural Resources, authorizing the harvest of nearly all the remaining old-growth forest in the Philippines. The plaintiffs had asked the Court to "arrest the unabated hemorrhage of the country's vital life support systems."[503] Reciting a forest pillage that parallels Oregon's story, the Court noted that, within the span of just twenty-five years, the virgin ancient old-growth forest blanketing the nation had been razed from 53% of the nation's land mass to 2.8%.[504] Moreover, the Court calculated, "At the present rate of deforestation, *i.e.* about 200,000 hectares per annum or 25 hectares per hour—nighttime, Saturdays, Sundays and holidays included—the Philippines will be bereft of forest resources after the end of this ensuing decade, if not earlier."[505]

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502 Oposa v. Factoran, G.R. No. 101083, 224 S.C.R.A. 792 (July 30, 1993) (Phil.). The case is reprinted in BLUMM & WOOD, *supra* note 25, at 464–67 and is available online at https://lawphil.net/judjuris/juri1993/jul1993/gr_101083_1993.html [https://perma.cc/T4HN-HVMZ].

503 *Id.* at 796.

504 *Id.* at 799.

505 *Id.*

Summarizing the plaintiffs' complaint, the Court underscored the value of forests as "contain[ing] a genetic, biological and chemical pool which is irreplaceable," supporting indigenous cultures which have "existed, endured and flourished since time immemorial."[506] It then summarized the ecological ravages clear-cutting had wrought on the nation, including its role in causing drought, flooding, vanishing species, erosion, reduced agricultural productivity, community dislocation, and "catastrophic climatic changes."[507]

Ruling decisively in favor of the young plaintiffs, the Court declared a public trust framework of intergenerational equity, stating, "Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors' assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come."[508] Finding enforceable rights against the government, the Court explained:

> The right to a balanced and healthful ecology carries with it the correlative duty to refrain from impairing the environment. . . . A denial or violation of that right by the other who has the correlative duty or obligation to respect or protect the same gives rise to a cause of action.[509]

Perhaps most importantly, the Court situated the children's ecological rights in a powerful fundamental rights framework, declaring:

> Such a right belongs to a different category of rights altogether for it concerns nothing less than self-preservation and self-perpetuation—aptly and fittingly stressed by the petitioners—the advancement of which may even be said to predate all governments and constitutions. *As a matter of fact, these basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind.* If they are now explicitly mentioned in the fundamental charter, it is because of the well-founded fear of its framers that unless the right to a balanced and healthful ecology and to health are mandated as state policies by the Constitution itself, . . . the day would not be too far when all else would be lost not only for the

506 *Id.* at 798.

507 *Id.* (and stating, "[T]he distortion and disturbance of this [ecological] balance as a consequence of deforestation have [*sic*] resulted in a host of environmental tragedies, such as . . . the reduction of the earth's capacity to process carbon dioxide gases which has led to perplexing and catastrophic climatic changes such as the phenomenon of global warming, otherwise known as the 'greenhouse effect.'").

508 *Id.* at 803.

509 *Id.* at 805.

> present generation, but also for those to come—generations which stand to inherit nothing but parched earth incapable of sustaining life.[510]

That unthinkable day has nearly arrived across the world. Because the Court understood that "Nature means the created world in its entirety," it found that the right to a "balanced and healthful ecology . . . implies, among many other things, the judicious management and conservation of the country's forests," and explained, "*Without such forests, the ecological or environmental balance would be irreversibly disrupted*."[511] Forests, it thus found, are an inextricable part of the ecological endowment, or trust.

b. Colombia, Brazil, and Argentina

In Colombia, the judiciary has embraced the concept of fundamental biocultural rights in the absence of an explicit constitutional guarantee to a healthy environment. A foundational case (and precursor to a landmark forest case) involved Colombia's Atrato Basin, one of the most biodiverse regions on Earth and home to several predominantly Afro-Colombian and Indigenous communities.[512] In *Center for Social Justice Studies v. Colombia* (the Atrato River Case), the plaintiffs, Indigenous and Afro-descendant communities and farmers living within the Atrato River Basin, challenged extractive industries operating in the basin for violating their fundamental rights.[513] They brought an *acción de tutela*, a specific judicial action under Colombian law, to force the government to remedy the ecological and humanitarian crisis in the Atrato Basin.[514] The plaintiffs claimed that the incursion of illegal and ecologically destructive mining and logging threatened their way of life.[515] Pollution associated with mining activity, including the dumping of mercury, cyanide, and other toxic chemicals, presented a serious risk to the life and health of the population, particularly because these communities directly consumed the river water.[516] Ecological

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510 *Id.* (emphasis added).

511 *Id.* at 806 (emphasis added).

512 Judgment T-622/16, Ctr. For Soc. Just. Stud. V. Presidency of the Republic (*The Atrato River Case*), Gaceta de la Corte Constitucional [G.C.C.] (Corte Constitucional [C.C.] 2016) (Colom.), *translated in* Dignity Rights Project 1 (Widener University Delaware Law School), http://files.harmonywithnatureun.org/uploads/upload838.pdf [https://perma.cc/486C-SE7G].

513 *Id.* at 6, 8.

514 *Id.* at 8.

515 *Id.*

516 *Id.* at 8–9.

damage caused by chemicals and heavy machinery used in logging posed another serious threat.[517]

Finding in favor of the plaintiffs, the Constitutional Court of Colombia interpreted the nation's Political Charter that "consecrates . . . ecological, environmental, and cultural matters" to include the "protection of rivers, forests, food sources, the environment and biodiversity, as they are part of the nation's natural and cultural wealth."[518] The Court acknowledged that the protection of these shared resources required "concrete actions of the State" in concert with the "participation of individuals, society and other social and economic sectors of the country."[519] Invoking a collective responsibility for conserving the nation's environmental resources and biodiversity, the court's decision granted the Atrato River legal personhood[520] and declared the rights of Atrato Basin communities to exercise autonomous guardianship over their environment and natural resources "according to their own laws and customs."[521] This decision not only announced fundamental environmental rights of the Atrato Basin communities but found cultural rights as well.

In a subsequent case that drew upon the jurisprudence established in the *Atrato River* case, the Supreme Court of Colombia held that the ecological destruction caused by the deforestation of the Amazon and attendant climate change constituted a violation of fundamental human rights. In *Future Generations v. Colombia*, twenty-five plaintiffs between the ages of seven and twenty-six sued Colombian government agencies as well as local municipalities to stop deforestation of the Amazon Forest.[522] The plaintiffs alleged that the deforestation, and consequent climate peril, violated their fundamental constitutional rights because they both lived in cities that were at the greatest risk from climate change and because they were part of "the future generation that will face the effects of climate change in the periods

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517 *Id.* at 9.

518 *Id.* at 31.

519 *Id.* at 33.

520 *Id.* at 34 (explaining that nature itself is a "subject of rights that must be recognized by the States and exercised under the protection of its legal representatives, such as . . . by the communities that inhabit nature or that have a special relationship with it").

521 *Id.* at 35.

522 Future Generations v. Ministry of Env't**,** STC4360-2018 Gaceta Judicial [G.J.] (No. 11001-22-03-000-2018-00319-01) (Corte Suprema de Justicia [C.S.J.] [Supreme Court] 2018) (Colom.), *translated in* ANTHONY R. ZELLE ET AL., EARTH LAW: EMERGING ECOCENTRIC LAW – A GUIDE FOR PRACTITIONERS 513 (2020).

2041–2070 and 2071–2100."[523] Finding in favor of the plaintiffs, the Supreme Court stated, in language resonating with the public trust, "the scope of protection of fundamental principles is [with] each person, but also . . . the other people that inhabit the planet, covering also animal and plant species. But, in addition, it includes the subjects not yet born, who deserve to enjoy the same environmental conditions lived by us."[524]

Recent ongoing litigation in Brazil follows suit in trying to advance forest and climate protection. Lawsuits seek to address illegal logging, forest degradation, and clear-cutting in Brazilian forestlands, claiming the resulting ecological damage constitutes violations of environmental legislation and domestic climate law.[525] Some cases present claims based on fundamental human rights and the principles of the public trust, arguing that the government's failure to safeguard the nation's forests constitutes a violation of the rights of present and future generations, with particular emphasis on the rights of Indigenous peoples and traditional communities living in the Amazon.[526] These suits seek remedial action aimed at halting illegal deforestation, reducing greenhouse gas emissions, and mandating climate action.[527] Some cases seek to restrain government, while other cases request relief in the form of positive obligations to force authorities to take action to comply with a state law mandating an 80% reduction in the annual rate of deforestation in Brazilian forests.[528]

Additionally, in Argentina in 2020, the Inter-American Court of Human Rights rendered a decision with implications for international environmental law. In *Indigenous Communities of the Lhaka Honhat (Our Land) Association v. Argentina*, Indigenous peoples brought suit based on environmental harm, including deforestation, caused by private citizens. The Court, partially relying on constitutional and international customary law, expressed the importance of fundamental

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523 *Id.* at 514.

524 *Id.* at 516. The Court further explained, "The environmental rights of future generations are based on (i) the ethical duty of the solidarity of the species and on (ii) the intrinsic value of nature." *Id.*

525 In several cases, plaintiffs, including Brazilian and international NGOs, allege that poor enforcement, government inaction, and deregulation is a direct cause of deforestation and climate degradation. *See* Joana Setzer & Délton Winter de Carvalho, *Climate Litigation to Protect the Brazilian Amazon: Establishing a Constitutional Right to a Stable Climate*, REV. EUR., COMPAR. & INT'L ENV'T L. 197, 199–205 (2021).

526 *See id.* at 203–05.

527 *Id.*

528 *Id.* at 200.

rights connected to healthy forests and determined that illegal logging in the region violated the community's rights.[529] The Court underscored a wide-ranging obligation to preserve a healthy environment for all people, citing Article 1(1) of the American Convention on Human Rights, and stating:

> Regarding the right to a healthy environment . . . States not only have the obligation to respect this, but also the obligation . . . to ensure it, and one of the ways of complying with this is by preventing violations. This obligation extends to the "private sphere" in order to avoid "third parties violating the protected rights," and "encompasses all those legal, political, administrative and cultural measures that promote the safeguard of human rights and that ensure that eventual violations of those rights are examined and dealt with as wrongful acts.[530]

The Court further endorsed the affirmative duty of the state to apply the precautionary principle to environmental conservation efforts, noting:

> [S]pecifically with regard to the environment, it should be stressed that the principle of prevention of environmental harm forms part of customary international law . . . [because] after the damage has occurred, it will frequently not be possible to restore the previous situation.[531]

c. India

In a 1996 case, the Supreme Court of India applied the fiduciary standards of the public trust to quash a government-approved lease of public forestland to a private resort.[532] In *M.C. Mehta v. Kamal Nath*, the Court determined that the government had breached its fiduciary duty as trustee of public environmental resources[533] by approving a lease of ecologically fragile forestland along a riverbed.[534] The Court

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529 Indigenous Cmtys. of the Lhaka Honhat (Our Land) Ass'n v. Arg., Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 400, 67 (Feb. 6, 2020), https://www.corteidh.or.cr/docs/casos/articulos/seriec_400_ing.pdf [https://perma.cc/3DPT-58RJ].

530 *Id.* at 68.

531 *Id.*

532 M.C. Mehta v. Kamal Nath, 1 SCC 388 (Sup. Ct. of India 1997), https://indiankanoon.org/doc/1514672/ (excerpt reprinted in BLUMM & WOOD, *supra* note 25, at 449–56).

533 *Id.* at 17 ("The Public Trust Doctrine primarily rests on the principle that certain resources like air, sea, waters and the forests have such a great importance to the people as a whole that it would be wholly [unjustified] to make them a subject of private ownership.").

534 *Id.* at 23. The resort itself admitted to "extensive[ly]" dredging and reconstructing the riverbed when it requested that the Indian government help contain the severe flood erosion." *Id.* at 5–6.

explicitly affirmed the obligation of the state to conserve both for the benefit of the public. Explaining that the alienation of public forests constituted a breach of duty, the Court declared:

> The State is the trustee of all natural resources which are by nature meant for public use and enjoyment. [The] [p]ublic at large is the beneficiary of the sea-shore, running waters, airs, forests and ecologically fragile lands. The State as a trustee is under a legal duty to protect the natural resources. These resources meant for public use cannot be converted into private ownership.[535]

To remedy the environmental damage caused by the lease, the Court declared that the land be returned to the state and ordered the resort to compensate the government for the cost of restoring the forestlands and affected riverbed.[536]

In a 2012 case seeking protection of the Asiatic wild buffalo and its habitat, the Supreme Court of India expanded its public trust jurisprudence to incorporate an eco-centric interpretation, somewhat parallel to the approach taken by the South American courts in cases discussed above.[537] The approach will undoubtedly have implications for forest protection in India. In *T.N. Godavarman Thirumulpad v. Union of India & Ors*, the Court declared the need to reframe humanity's place in the ecosystem and to properly consider the interests of non-humans in judicial decisions.[538] In its discussion of India's habitat management plans, the Court explained:

> Ecocentrism is nature cent[e]red where humans are part of nature and non-human has intrinsic value. In other words, human interest[s] do not take automatic precedence and humans have obligations to non-humans independently of human interest. Ecocentrism is therefore life-cent[e]red, nature-cent[e]red where nature include both human and non-humans.[539]

The Court tied the state's legal obligation to protect the nation's wildlife and habitats to constitutional and statutory law, the public trust doctrine (as expressed in *M.C. Mehta v. Kamal Nath*), Indian religious and philosophical literary tradition, and international agreements, including the Convention on Biological Diversity, which "affirm[s]

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535 *Id.* at 21.

536 *Id.* at 23.

537 T.N. Godavarman Thirumulpad v. Union of India, 1 SCC (Sup. Ct. of India 2012), https://indiankanoon.org/doc/187293069/ (last accessed Apr. 13, 2023).

538 *See id.* ¶¶ 20–22, 26.

539 *Id.* ¶ 14.

that the conservation of biological diversity is a common concern of humankind."[540]

d. Pakistan

In 2005, the Sindh High Court of Pakistan set the stage for later forest litigation when it declared the public trust principle, stating: "It is well-settled that natural resources like air, sea, waters, and forests are like Public Trust . . . [requiring] the Government to protect the resources for the enjoyment of the general public rather than to permit their use for private ownership or commercial purposes."[541] From this legal foundation, in 2018, the Lahore High Court in Pakistan invoked the public trust doctrine to affirm the government's obligation to enforce legislation intended to protect Pakistan's forests for the benefit of its citizens. In *Farooq v. Pakistan*, petitioners coupled their assertion of constitutional rights with the public trust. Characterizing forests as within the trust *res*, they argued that the government breached its obligation to manage the forests for the "enjoyment of the general public rather than to permit their use for private ownership or commercial purposes."[542] Noting the gravity of the situation—"It is unfortunate, catastrophic and shocking that the forests of the country are now almost extinct . . . decreasing at such an alarming speed that all the forest area will be consumed within the next few years"—the court found for plaintiffs, holding that the government was obligated to

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[540] *See id.* ¶¶ 18–23, 26. The United States is one of four nations that have failed to ratify the Convention on Biological Diversity. The others are Andorra, South Sudan, and the Vatican. *See The Convention on Biological Diversity*, SOC'Y FOR CONSERVATION BIOLOGY, https://conbio.org/policy/policy-priorities/treaties/cbd [https://perma.cc/H7MH-N23M].

[541] Sindh Inst. of Urology & Transplantation v. Nestlé Milkpak Ltd., 2005 CLC 424, excerpted in BLUMM & WOOD, *supra* note 25, at 462–63 (successfully challenging a water bottling plant pursued by Nestlé Milkpak Limited). In an earlier 2004 ruling delivering a preliminary junction against construction of the plant, the court quoted an opinion from India, stating:

> Rivers, forests, minerals and such other resources constitute a nation's natural wealth. These resources are not to be frittered away and exhausted by any one generation. Every generation owes a duty to all succeeding generations to develop and conserve the natural resources of nation in the best possible way. It is in the interest of mankind. It is in the interest of the nation.

Sindh Inst. of Urology & Transplantation v. Nestlé Milkpak td, Suit No. 567 (High Court of Sindh 2004) (Pak.), translated by ENV'T L. ALL. WORLDWIDE, https://elaw.org/system/files/attachments/publicresource/PK_SindhInstituteVNestleMilkpak_2004.pdf [https://perma.cc/3WLH-XV6C] (quoting State of Tamilnadu v. Hind Stone, 1981(2) SC 205, 212).

[542] Farooq v. Pak., Writ Petition No. 192069 1, 4–5 (Lahore High Ct. 2018). The case is quoted in BLUMM & WOOD, *supra* note 25, at 463.

comply with forest laws.[543] It mandated a course of remedial action that included the development of an urban forestry policy and a requirement to plant trees in urban areas.[544]

The following year, the Lahore High Court further underscored the public trust responsibility in *Pansota v. Pakistan*.[545] In that case, the Court recognized a fundamental human right to food security, citing the Constitution's guarantee of the right to life.[546] The plaintiffs in *Pansota* asserted claims explicitly based on the public trust, asking to Court to grant an order requiring the state to "fulfill their fiduciary responsibilities under the Doctrine of Public Trust and ensure preservation, conservation and proper management of food."[547] Resolving the case in favor of the plaintiffs, the court issued a writ of mandamus setting guidelines for minimizing food waste and promoting food security, noting that the right to food is essential to the exercise of a fundamental right to life, and the state has an affirmative obligation to take measures to ensure against infringement of this right.[548] The case falls in step with a growing body of global jurisprudence that recognizes the interconnectedness of the right to life, the right to a healthy environment, and the public trust, and it also demonstrates

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543 *Farooq*, Writ Petition No. 192069 at 4–5.

544 *Id.* at 73–75. The court further required progress reports to ensure compliance with the court order and directed the "competent authority [to] impose the penalty against the relevant officers for omission of their duties." *Id.* at 74. On February 8, 2023, the Supreme Court of Pakistan issued an opinion adding to its forest jurisprudence. It underscored the importance of forests to climate stability, flood control, and a host of other human needs, emphasizing the human "responsibility as trustees of the earth and of all of creation" to protect forests. *See* Hasnaat Malik, *SC Calls for Protecting Integrity of Ecosystem*, THE EXPRESS TRIB. (Feb. 8, 2023), https://tribune.com.pk/story/2400044/sc-calls-for-protecting-integrity-of-ecosystem [https://perma.cc/8UUA-KEW4].

545 Pansota v. Pak., Writ Petition No. 840 (Lahore High Ct. 2019).

546 *Id.* at 16.

547 *Id.* at 2. Reflecting on the nature of the plaintiff's petition, the court said that the claims seeking vindication of the public interest are a

> powerful tool for individuals and groups to combat illegalities, injustice and social ills, which promote and protect the larger public interest . . . of any fundamental rights. It is an innovative strategy which has been evolved over the years to provide easy access to justice to the weaker/marginalized sections of humanity. It is a powerful tool in the hands of public, spirited individuals and social action groups used for combating exploitation and injustice and for securing for the underprivileged segments of society their social and economic entitlements especially in matters of public importance.

Id. at 10–11.

548 *Id.* at 42–44.

judicial capabilities of enforcing the state's fiduciary duty to protect these essential human rights for present and future generations.[549]

e. Uganda

Ugandan courts have also invoked the public trust doctrine to protect forests. In Uganda, the public trust doctrine is codified in both the constitution and statutory law. The constitution provides explicit protections for resources covered by the public trust,[550] declaring that the government "shall hold in trust for the people and protect, natural lakes, rivers, wetlands, forest reserves, game reserves, national parks and any land to be reserved for ecological and touristic purposes for the common good of all citizens."[551] Additionally, the Land Act reified the nation's public trust doctrine and specified the government's fiduciary duties as trustees.[552] This act granted the government the authority to grant concessions to trust properties along with the power to review these concessions.[553]

In the 2004 case *Advocates Coalition for Development and Environment v. Attorney General*, the High Court of Uganda ruled that the public trust extends to reserved forestlands.[554] Under a longstanding lease, Kakira Sugar Works had the right to take firewood from the neighboring Butamira Forest Reserve for its sugar refinery.[555] Kakira then applied for a fifty-year permit from the federal government to transform the forest into plantation lands.[556] The government granted the permit, and the Ugandan public interest organization Advocates Coalition for Development and Environment challenged its issuance on public trust grounds.[557] The Court found in favor of the plaintiffs, ruling that the government had no authority to lease or alienate the Reserve, which is land that the government holds in trust

549 For a detailed examination of worldwide jurisprudential development around fundamental rights, see JAMES R. MAY & ERIN DALY, GLOBAL ENVIRONMENTAL CONSTITUTIONALISM (2015).

550 CONST. OF UGANDA, art. XIII. ("The State shall protect important natural resources, including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda.").

551 *Id.* ch. 15, art. 237, § 2(b).

552 The Land Act, UGA-1998-L-97678, ch. 227, § 44(1) (1998) (Uganda).

553 *Id.* at § 44(5).

554 Advos. Coal. for Dev. & Env't (ACODE) v. Att'y Gen., Misc. Cause No. 0100, 15–16 (High Ct. Uganda 2004).

555 *Id.* at 5.

556 *Id.* at 4.

557 *Id.* at 2–4.

for the benefit of the people.[558] Significantly, the Court found as evidence that the government had breached its public trust duties the fact that local communities who relied on the forest for their livelihood organized a group of over 1,500 members to protest the grant of the permit to Kakira Sugar Works.[559] While acknowledging that the Reserve was properly held in trust by the government for the citizens of Uganda, the Court recognized the local community's unique connection to the forest, stating, "Politically and socially, Butamira Forest reserve belongs to the local community in Butamira. The people of Butamira also have a moral, cultural, economic and spiritual attachment to Butamira Forest Reserve as a source of sports, worship, herbal medicine, economy, etc."[560] Finding that these interests were entitled to legal protection, the Court concluded that the government had no authority to alienate the lands without first consulting with the local community, and it pronounced the concession to Kakira Sugar Works invalid.[561]

f. Canada

A 2004 Canadian Supreme Court case, *British Columbia v. Canadian Forest Products Ltd*. ("*Canfor*"), addressed the public trust on national forest lands in the context of damage recovery.[562] There, the federal government (the Crown) sought to recover damages for a wildfire started by a private timber company that had rights to log federal land.[563] The fire swept across federal forest areas marked for timber production as well as areas reserved for ecological value where logging was prohibited.[564] On appeal to the Supreme Court, the Crown asserted for the first time a novel damages component for the protected area, characterizing proper damages as including an additional "premium over and above auction value [of timber] for the degradation of the environment caused by destruction of the non-harvestable trees."[565]

Addressing this new damage component and emphasizing that "[t]he question of compensation for environmental damage is of great importance," the *Canfor* Court seized the opportunity to introduce a

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558 *Id.* at 16.

559 *Id.*

560 *Id.* at 22.

561 *Id.*

562 British Columbia v. Canadian Forest Prods. Ltd., [2004] 2 S.C.R. 74 (Can.).

563 *Id.* at 75.

564 *Id.*

565 *Id.* at 87.

public trust frame where none had been asserted by the Crown in its complaint, detailing the long history of public trust jurisprudence back to the Institutes of Justinian and Bracton's Treatise on English law.[566] The Court stated:

> This notion of the Crown as holder of inalienable "public rights" in the environment and certain common resources was accompanied by the procedural right of the Attorney General to sue for their protection representing the Crown as *parens patriae*. This is an important jurisdiction that should not be attenuated by a narrow judicial construction.[567]

From there, the Court underscored the viability of a sovereign bringing a suit under common law for damages to the public trust and cited multiple American cases that awarded damages outside statutory law for injury to public trust resources.[568] The Court surmised that "there is no legal barrier to the Crown suing for compensation as well as injunctive relief in a proper case on account of public nuisance, or negligence causing environmental damage to public lands."[569]

Ultimately, however, the *Canfor* Court rejected the damages claim because the Crown had not argued the theory of public trust damages or asserted ecological losses in its complaint.[570] Reminding the parties that "[a] claim for environmental loss, as in the case of any loss, must be put forward based on a coherent theory of damages, a methodology suitable for their assessment, and supporting evidence,"[571] the Court noted that "[t]he groundwork for a claim on some broader 'public' basis was not fully argued in the courts below" and concluded that "[i]t would be unfair to the other parties to inject such far-reaching issues into the proceedings at this late date."[572] In so ruling, the Court recognized "clearly important and novel policy questions raised by

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566 *Id.* at 87, 111–12.

567 *Id.* at 112.

568 *Id.* at 112–13. The Court cites the "successful[] . . . environmental claims" of North Dakota v. Minnesota, 263 U.S. 365, 374 (1923), Missouri v. Illinois, 180 U.S. 208 (1901), Kansas v. Colorado, 206 U.S. 46 (1907), Georgia v. Tenn. Copper Co., 206 U.S. 230 (1907), and New York v. New Jersey, 256 U.S. 296 (1921).

569 *Canadian Forest Prods.*, 2 S.C.R. at 114.

570 *Id.* at 76–77 ("The environment includes more than timber, but no allegation of such additional losses were made in that regard. The pleadings proceeded on a fairly narrow commercial focus and that is how the claim was defended.").

571 *Id.* at 76.

572 *Id.* at 115.

such actions," including those related to trustee liability and fiduciary duties owes to the public.[573]

While the ultimate result in the *Canfor* case did not favor the government, it is clear that the Supreme Court of Canada invited a view of the full forest ecology as a public trust resource (at least on public land), and it conceptually paved the way for future common law claims of natural resource damages against private parties that destroy such resources. The case analytically planted a public trust footing in Canadian jurisprudence. Other cases from lower courts have suggested a public trust,[574] and the matter is presently before the Court of Appeals in an atmospheric trust litigation case, *La Rose v. Her Majesty the Queen*.[575]

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573 *Id.* at 114–15 ("These include the Crown's potential liability for *inactivity* in the face of threats to the environment, the existence or non-existence of enforceable fiduciary duties owed to the public by the Crown in that regard, the limits to the role and function and remedies available to governments taking action on account of activity harmful to public enjoyment of public resources, and the spectre of imposing on private interests an indeterminate liability for an indeterminate amount of money for ecological or environmental damage.").

574 In *Labrador Inuit Ass'n v. Newfoundland*, the Newfoundland Court of Appeal relied on the public trust doctrine to order an environmental assessment on a government-approved mining project. Labrador Inuit Ass'n v. Newfoundland, 155 Nfld. & P.E.I.P. 93 (Can. 1997) (excerpted in BLUMM & WOOD, *supra* note 25, at 492). There, the court observed the ways the public trust doctrine informs natural resource management policies, stating:

> If the rights of future generations to the protection of the present integrity of the natural world are to be taken seriously, and not to be regarded as mere empty rhetoric, care must be taken in the interpretation and application. Environmental laws must be construed against their commitment to future generations and against a recognition that, in addressing environmental issues, we often have imperfect knowledge as to the potential impact of activities on the environment.

Id.

In a 2005 case, a Prince Edward Island trial court refused to dismiss a breach of public trust claim concerning federal management of the Atlantic fisheries. Citing the Supreme Court's ruling in *Canadian Forest Products*, the court extrapolated that because the government can sue for damages due to its status as trustee, "then it would seem in another case [that] a beneficiary of the public interest ought to be able to claim against the government for a failure to properly protect the public interest . . . [because] a right gives a corresponding duty." Prince Edward Island v. Can. Minister of Fisheries & Oceans, 256 Nfld. & P.E.I.R. 343, para. 6 (Can. 2005) (excerpted in BLUMM & WOOD, *supra* note 25, at 492).

575 In *La Rose v. Her Majesty the Queen*, youth plaintiffs claimed the defendants' greenhouse gas emissions targets were incompatible with a stable climate system and therefore a breach of trust to present and future generations under the public trust doctrine. [2020] F.C. 1008 (Can. Ont.). The plaintiffs asserted that, while legal rights arising from public trust doctrine may be largely unrecognized in Canadian jurisprudence, they are not "non-existent." *Id.* at 32. The court disagreed, stating:

A recent study underscores the threat posed by Canfor's logging activities to British Columbia's remaining unprotected, rare old-growth forests,[576] identifying Canfor's harvest operations in "deferral areas" that encompass much of the nation's most productive old-growth forests.[577] Thus, nearly twenty years after the *Canfor* case, ecologically destructive logging remains a threat to old-growth forests,[578] and the potential for strong judicial remedies for damage claims against extractive timber corporations has not yet been realized despite the groundwork laid in the *Canfor* case.

g. Hungary

In 2020, the Hungarian Constitutional Court issued a resounding affirmation of the public trust principle as it applies to the nation's forests found on both public and private property.[579] The decision has been celebrated as one of the foremost forest protection decisions in the world.[580] The case was brought by the nation's Commissioner for Fundamental Rights, who is empowered to bring litigation to vindicate public rights.[581] Finding a legislative amendment to the Forest Act unconstitutional, the Court read a constitutional provision (Article P)

> I remain unconvinced that a claim for the public trust doctrine should proceed to trial on the basis that it is a novel claim and that I must err on the side of caution. Rather, the public trust doctrine is a concept that Canadian Courts have consistently failed to recognize. It does not exist in Canadian law. In this respect, I do not agree with the Plaintiffs' attempt at distinguishing an unrecognized from non-existent cause of action.

Id. at 35. Nevertheless, the court suggested the possibility of judicial recognition of such claims in the future, provided this progress occurs in an incremental manner, or, alternately, on the basis of legislative action affirming the trust responsibility. *Id.*

576 Angeline Robertson & Greg Higgs, *Risking It All: The Top Logging Companies Threatening B.C.'s Most Rare and At-Risk Old Growth Forests*, STAND. EARTH RSCH. GRP. (Mar. 7, 2022), https://www.stand.earth/sites/stand/files/old_growth_risk_preliminary_research_brief.pdf (on file with author).

577 *Id.* at 4.

578 *Id.*

579 *Forests and Nature Protection in Hungary, Summary of the Constitutional Court Decision 14/2020. (VII. 6.)*, CLIENT EARTH, https://www.clientearth.org/media/hm1cvgxj/decision-of-constitutional-court-of-hungary-ext-en.pdf [https://perma.cc/U4AM-5SZ9].

580 *See Two Huge Wins for Hungarian Forests and Nature Conservation*, WORLD WILDLIFE FUND (July 13, 2020), https://wwf.panda.org/wwf_news/?364628/2-Hungarian-forest-wins [https://perma.cc/N4M4-YMML].

581 Sulyok, *supra* note 433, at 359. *See also id.* at 367 ("The Commissioner is granted with the power under relevant laws to challenge acts before the Constitutional Court that are believed to run counter to constitutional safeguards; in this instance, the right to a healthy environment and the protection of interests of future generations as guaranteed under Article P.").

protecting future generations to embody the ancient public trust principle.[582] Article P of the Fundamental Law declares, "All natural resources, especially agricultural land, forests and drinking water supplies, [and] biodiversity" [are] the "nation's common heritage" and obliges "the State and every person . . . to protect, sustain and *preserve them for future generations*."[583] Noting that the principle "only allow[s] the exhaustion of such resources for present generations until it does not threaten the long-term existence of the natural and cultural assets that are worthy of being protected on account of their inherent values,"[584] the Court announced the core constitutional duty of the State:

> In essence . . . the State shall act as a sovereign trustee and shall manage natural and cultural heritage entrusted to its care for the benefit of the trust's beneficiaries, i.e. future generations. This means that it can only allow the exhaustion of such resources for present generations until it does not threaten the long-term existence of the natural and cultural assets that are worthy of being protected on account of their inherent values. The State shall consider the interests of future and present generations equally in enacting new laws and in managing such resources.[585]

The disputed forest law amendment, passed in 2017 under intense pressure from forest managers, greatly narrowed the statutory protection accorded to forests by stripping the government agencies of much of their authority to restrict timber harvest on private lands.[586] Striking the law as violating the trust (and therefore Article P), the Court announced several sovereign fiduciary principles that have analogous bearing in Oregon. One was a "non-derogation" principle, whereby a legislature cannot weaken the environmental protections in

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[582] *Id.* at 372–74.

[583] FUNDAMENTAL LAW OF HUNGARY [CONSTITUTION], art. P (emphasis added).

[584] *The Hungarian Forests Decision*, at Reasoning [22] (quoted in Sulyok, *supra* note 433, at 364–65).

[585] *Id.* Sulyok writes:

> The Constitutional Court based its inquiry on the public trust doctrine, by emphasizing that Article P compels the legislature to allow the *exercise of property rights only to the extent that it does not jeopardize the long-term viability of the natural and cultural heritage*. The Constitutional Court went on to find that the unlimited freedom of forest owners and managers shall be replaced by the requirement of pursuing sustainable forestry. The public trust doctrine was also interpreted as entailing an obligation for the lawmaker to account for the interests of both future and present generations in designing laws governing the use of the common heritage of the nation.

Id. at 373–74 (citation omitted) (emphasis added).

[586] *Id.* at 367, 372.

force at a given time.[587] The Court also applied basic substantive standards of protection, overturned the law for its allowance of more clear-cutting and deforestation, and imposed a precautionary approach on forest managers.

In sum, cases around the world have found forests to be squarely within the ambit of the public trust *res*. Courts have connected forest protection to vital public needs, such as climate security, food provision, biodiversity, and water supply. Many cases have paired their nation's public trust jurisprudence with other emerging fundamental rights approaches, such as those centering on the right to life, food security, cultural integrity, and indigenous sovereignty. Some have broadened the public trust principle to include an eco-centric approach. All hold instructive wisdom for Oregon as the state languishes in an old model of land management that defies public trust values and puts the future of forests at great risk.

V
APPLICATION OF FIDUCIARY TRUST STANDARDS TO OREGON'S FORESTS

This Part explores in more detail the substantive and procedural fiduciary duties of a sovereign trustee and juxtaposes them against Oregon's forest practices on public and private lands.[588] On public forestlands, the duties must shape and constrain land management choices. As to private lands, the sovereign must regulate timber corporations and other landowners in a manner necessary to meet its fiduciary duties under the public trust.

These duties are distilled from the leading cases in public trust law. Many (though not all) courts import well-developed fiduciary standards of care from private trust law.[589] As noted above, courts have

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587 *See id.* at 370. That principle has less relevance to the Oregon state laws because those legal protections have been painfully inadequate for some time, but it may have bearing on federal cutbacks in forest protection.

588 As expressed by the U.S. Supreme Court, "It is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to the people of the state." Geer v. Connecticut, 161 U.S. 519, 534 (1896).

589 Ctr. for Biological Diversity, Inc. v. FPL Grp., 166 Cal. App. 4th 1349, 1359–66 (2008) (recognizing that the state holds natural resources as a trustee for the public and that where public agencies breach fiduciary responsibility private citizens have standing to sue and enforce the public trust); *see also* Juliana v. United States, 217 F. Supp. 3d 1224, 1254 (D. Or. 2016) ("The natural resources trust operates according to basic trust principles, which impose upon the trustee a fiduciary duty to 'protect the trust property against damage

made clear that these trust fiduciary standards stand separate and apart from statutory standards, so compliance with statutes does not consequently amount to compliance with a trustee's fiduciary duty. The two areas of law (statutes and public trust) form separate, necessary inquiries. Far too often, an agency pleads compliance with its authorizing statute as a wholesale justification for allowing irrevocable damage to crucial ecology. But as noted at the outset of this Article, defending agency decisions as compliant with statutes says little in the context of a breezy statutory scheme that leaves caverns of discretion: indeed, statutory compliance all too often boils down to compliance with the agency's political interests that illegitimately materialize through the exercise of discretion. The fiduciary standards and other tenets of the public trust remain essential to fill and guide this readily manipulated discretion in a way that promotes, rather than undermines, public interests.

The discussion below addresses the basic standards of fiduciary duty against some of the core management and regulatory decisions in the forest context, but the examination is necessarily general because the application of these trust standards to actual decisions must be intensely context specific. To comply with its trust obligation to the public, an agency may not simply invoke its discretion to decide one way or another. Instead, it must engage the rigorous analysis necessary to judge its trust duty against the specific circumstances it finds, and it must revisit and refresh its analysis as warranted by the radical ecological change triggered by the climate emergency. Moreover,

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or destruction.'" (citing GEORGE GLEASON BOGERT ET AL., BOGERT'S THE LAW OF TRUSTS AND TRUSTEES, § 582 (2016))). The full panoply of private standards receives strict application in the context of state forestlands that are managed for the schoolchildren beneficiaries. In that context, the courts view the trust more akin to a financial trust. *See* Cnty. of Skamania v. State, 685 P.2d 576, 580 (Wash. 1984) ("[T]hese are real, enforceable trusts that impose upon the state the same fiduciary duties applicable to private trustees."). The Oregon Supreme Court has rejected the broadscale application of private fiduciary standards to public trustees but has left room for differing future interpretation. *See* Chernaik v. Brown, 475 P.3d 68, 83–84 (Or. 2020) ("[T]his court's case law cannot be read to conclude that all common-law principles of private trust law govern the public trust doctrine," but stating, "We also do not foreclose the possibility that the doctrine might be expanded in the future to include additional duties imposed on the state."); *see also* discussion *supra* Section III.B.4. The *Chernaik* rejection of fiduciary responsibility conflicts with the classic interpretation of the public trust, in which a trustee has both the authority and the duty to protect the trust and exercise other fiduciary responsibilities. *See, e.g.*, *In re* Water Use Permit Applications, 9 P.3d 409, 453 (Haw. 2000) ("[T]he state's power to supervise trust property in perpetuity is coupled with the ineluctable duty to exercise this power." (quoting State v. Centr. Vt. Ry., Inc., 571 A.2d 1128, 1132 (Vt. 1989)).

trustees must convey their analysis to the public beneficiaries, who are the primary parties situated to judge their trustee's performance.

The discussion below proceeds first with the substantive duties of a trustee, followed by the procedural duties. The substantive duties aim toward replenishment, rather than continued depletion, of the ecological endowment. The various duties overlap in large measure: a destructive agency action will often violate multiple duties. The procedural duties primarily work to ensure that the trustee manages with competence, and that the government's awesome control over the people's natural assets advances the interests of the citizenry rather than singular private interests who may have considerable political leverage over the agency.

A. Substantive Duties of Trustees

1. The Duty of Protection

The fiduciary duty of protection lies at the "heart of trust law."[590] As the district court in *Juliana v. United States* declared, "the public trust imposes on the government an obligation to protect the *res* of the trust."[591] The standard frequently invoked by courts in applying the duty of protection is that trustees must prevent "substantial impairment" to the trust.[592] The duty of protection is an active duty, which means that "the legislature and executive branch must take affirmative actions to protect trust resources" and may not "sit idle and allow the trust property to fall into ruin on [their] watch."[593]

This standard must apply to the forest ecosystem as a whole to sustain its multitude of functions. As discussed above, Oregon's forest trust provides clean and abundant drinking water, habitat for a rich diversity of fish and wildlife species, world-class recreation opportunities, magnificent scenic value, and vital carbon sinks necessary to clean the sky of carbon dioxide.

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590 WOOD, *supra* note 22, at 167.

591 *Juliana*, 217 F. Supp. 3d at 1260.

592 *See supra* Section III.C.2.

593 QUIRKE, *supra* note 328, at 13; WOOD, *supra* note 22, at 168; *see also supra* Section III.C.2. The *Chernaik* majority opinion, however, dismisses the broad duty of protection as well as the active nature of the duty. *Chernaik*, 475 P.3d at 72. But the opinion finds the state has a duty "to protect public trust resources for the benefit of the public's use of navigable waterways for navigation, recreation, commerce, and fisheries." *Id.* at 83. As Chief Justice Walters pointed out in her dissent, "To ensure the future use and enjoyment of public trust resources, the state must do more than refrain from selling public trust resources and restricting their use. The state must act reasonably to prevent their substantial impairment." *Id.* at 86 (Walters, C.J., dissenting).

The duty of protection applies in a twofold manner. First, wherever located, if forest is classified as a public trust asset in its own right, the duty of protection applies directly and primarily to the forest.[594] Second, since streambeds, water, fisheries, wildlife, and the atmosphere are themselves trust assets that depend on unimpaired, high-functioning forests, the trustees' duty to protect these trust assets implicates a concomitant, corollary duty to protect forests as ancillary trust assets.

For any given trust resource (including forests) a wide range of uses generally remain consistent with avoiding substantial impairment. The duty of protection does not categorically translate into a wholesale prohibition on cutting of trees. The public trust serves utilitarian objectives to support the needs of society, which necessarily entail resource use. But that objective is markedly distinct from allowing substantial impairment, much less obliteration, of the forest resource or associated resources (fish, wildlife, waters, air, soils)—evident in all too many past and continuing forest management practices.

The determination of what combination of uses avoids substantial impairment must be made by reference to the public purposes served by the resource. If a forested watershed supplies a drinking water source, for example, the impact of any logging may risk substantial impairment of those water supplies; if so, it violates the duty of protection. If a forest provides splendid recreational and scenic opportunity to the public, then the cutting of even a few grand mature trees may substantially impair the resource for that purpose.[595] If the forest provides crucial migratory or dispersal habitat for an imperiled species, then cutting in certain areas may substantially impair needed habitat.[596] And in a world of climate heating, protecting large trees remains vital for carbon storage, a matter discussed in more detail below.

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[594] If the forest is located on public land—federal, state, or local—there is no question that the sovereign trustees owe a fiduciary duty to protect the forest, because the forest estate is public property. *C.f. Juliana*, 217 F. Supp. 3d at 1261.

[595] For example, in the West Bend thinning project outside of Bend, Oregon, the U.S. Forest Service cut trees along the Pine Drops mountain bike trail that were significant to the local community without conducting any public trust analysis on the effect it would have on public recreation. *See generally* Bradley W. Parks, *Group Sounds Alarm Over Plan to Cut Big, Old Trees Near Bend*, OR. PUB. BROAD. (Mar. 11, 2022, 5:00 AM), https://www.opb.org/article/2022/03/11/logging-west-bend-old-growth-oregon-wild/ [https://perma.cc/5RDN-PVJZ].

[596] *See infra* note 628 and accompanying text.

Manifestly, the economic expectations of large industrial timber operators have veered profoundly out of alignment with the basic public trust requirements to protect crucial resources. As trustees of invaluable ecological wealth, federal and state agencies must protect the public's trust commonwealth despite these corporate ambitions.[597] As the needs of society bend acutely toward conservation, new forest practices must take hold as guideposts for the future. A leading forestry textbook provides a detailed iteration of more sustainable practices compatible with some economic gain, though the approach would likely not satisfy the corporate appetite for profit.[598] A number of smaller woodland owners (as described in Section II.D above) provide inspiring examples of sustainable practices. Increasingly too, innovative policy options emerge with a goal of realigning community economic and environmental sustainability, as Part VII below highlights. New forest management initiatives aim to promote carbon sequestration, deliver ecosystem services, and support rural communities both economically and ecologically.

But at present, the large-scale industrial forestry practiced in Oregon (on seven million acres of private land and to varying degrees on federal and state lands), involves this cycle: cut, strip the land of all trees and vegetation, plant, spray chemicals, thin, cut again, and sell the timber product. The cycle remains designed exclusively for private commodity production, not public commonwealth preservation. The discussion below focusses on four injurious practices: (1) clear-cutting, (2) road building, (3) chemical spraying to suppress the growth of competition species, and (4) replanting with monocultures. Magnified across large landscapes, all four practices violate the trust standard of protection against substantial impairment.

a. Clear-Cutting

Historically and, all too often presently, the dominant harvest method on private as well as many public Oregon forests was, and remains, clear-cutting,[599] an inherently annihilative practice which destroys the multitude of ecological functions that make a forest a forest. The method denudes the forest, leaving barren ground and slash

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597 *See* discussion at *infra* note 744 and accompanying text (describing the duty against making decisions for the primary benefit of a private party).

598 *See generally* FRANKLIN ET AL., *supra* note 256.

599 The practice is euphemistically referred to in Forest Service documents as "even-aged management." Oliver A. Houck, *Damage Control: A Field Guide to Important Euphemisms in Environmental Law*, 15 TUL. ENV'T L.J. 129, 130 (2001).

piles in the place of trees, abruptly ruining the bounty and natural services that the forest provides. Clear-cutting transforms invaluable ecological commonwealth which supports society into a commodity for singular profit. Multiple provisions in the Oregon FPA and federal management regulations permit this damaging logging. An agency's allowance of (or failure to prohibit) clear-cutting violates the state's fiduciary obligation many times over when the clear-cutting damages other public trust assets such as navigable waters, fish, and wildlife, all of which are recognized as traditional public trust resources in Oregon.[600] In the present climate emergency, scientists warn that harvest also pollutes the atmosphere, a resource that courts may increasingly bring into the trust's ambit of protection.[601]

i. Harm to Water Sources and Streambeds

Drinking water sources—essential for sheer human survival—remain arguably one of the most important public trust resources to society.[602] As a leading report by an OSU team of scientists states, "By filtering rain and snowfall and delivering it to streams and aquifers, forests also produce the highest quality and most sustainable sources of water on earth, arguably their most important ecosystem service."[603] It is estimated that 80% of Oregon communities gain their drinking water from sources that begin in forested watersheds.[604] Clear-cutting or intensive harvest can work irrevocable harm on the natural hydrology of the watershed, despoiling or even eliminating the water supplies of downslope communities. A significant overlap exists between industrial forest ownerships and public drinking water supplies, as *OPB* reporter Tony Schick explained in an investigative

600 *See* Michael C. Blumm & Erika Doot*, Oregon's Public Trust Doctrine: Public Rights in Waters, Wildlife, and Beaches,* 42 ENV'T L. 375, 401–02 (2012).

601 *See* BLUMM & WOOD, *supra* note 25, at 381.

602 *See* WOOD, *supra* note 22, at 144–45 (describing "public concern" test as set forth in *Illinois Central* to assess resources subject to trust protection). The *Chernaik* Court's narrow opinion excludes drinking water from the ambit of Oregon's public trust *res*, but the Court said the doctrine could expand in the future. *See* Chernaik v. Brown, 475 P.3d 68 (Or. 2020).

603 Jon A. Souder & Jeff Behan, *Findings and Recommendations*, *in* TREES TO TAP, *supra* note 60, at 282.

604 Cascadia Wildlands, *Oregon's Forest Waters*, CASCADIA WILDLANDS, https://www.cascwild.org/campaigns/protecting-forests-and-wild-places/forest-waters/ [https://perma.cc/4TNW-6QCJ] (discussing proposed legislation stating that "80% of Oregon's residents and communities draw their drinking water from rivers and streams that begin in a forest"); *see also* Jon A. Souder, *Introduction: Forestry and Management in Oregon*, *in* TREES TO TAP, *supra* note 60, at 1 (stating that 337 public water providers in Oregon rely on surface waters for some or all their supply, and that these providers serve 3.5 million Oregonians).

article. As Schick reports, "40 percent of the drinking water systems on the coast flows through forest owned by private companies that log extensively."[605] A 2020 study of Oregon forest practices finds that logging can cause "intensified erosion or mass wasting from hillslopes, and roads," delivering sediment to public water supplies.[606] As Schick and Oregonian reporter Rob Davis reveal in investigative journalism focused on timber practices, "More than two dozen communities have had at least 40% of the forests around drinking water sources cut down in the past 20 years."[607] Moreover, postfire logging and associated roads in a burned landscape can significantly increase turbidity in watersheds.[608]

Notorious harm to key water supply sources was documented by Schick and Davis.[609] In one example of voracious harvest practices on the Oregon Coast, private timber corporations denuded nearly the entire Jetty Creek watershed over the course of just twenty years.[610] "Swaths of forests have been replaced by bald slopes," resulting in irreparable damage to the water supply of Rockaway Beach, a small town on the northern Oregon coast.[611] The story repeats itself elsewhere. The town of Corbett, Oregon, seemingly lost a drinking water source due to massive clear-cutting of its drinking watershed.[612] Oregon's regulatory agencies have long ignored this obvious threat to drinking water supplies from watershed logging. As Schick reports, a draft resource guide prepared by the Oregon DEQ for fifty public water systems along the coast identified logging as a threat to drinking water supplies in watersheds primarily owned by private companies, but the

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605 Tony Schick, *After Pushback, Oregon Scraps Report Linking Private Forests to Water Quality Risks*, OR. PUB. BROAD. (Jan. 6, 2017, 12:24 AM), https://www.opb.org/news/article/oregon-private-forests-to-water-quality-risks/ [https://perma.cc/EP4J-SP25].

606 Aaron Rachels et al., *Quantifying Effects of Forest Harvesting on Sources of Suspended Sediment to an Oregon Coast Range Headwater Stream*, 466 FOREST ECOLOGY & MGMT. 118, 123 (2020).

607 Schick & Davis, *supra* note 20.

608 Monica B. Emelko et al., *Implications of Land Disturbance on Drinking Water Treatability in a Changing Climate: Demonstrating the Need for "Source Water Supply and Protection" Strategies*, 45 WATER RSCH. 461, 464 (2011) (advocating for water source protection strategy).

609 *See* Schick & Davis, *supra* note 20. *See also* Behan, *supra* note 603, at 285 ("[E]xisting Forest Practices Act rules are insufficient to protect some water quality attributes.").

610 Schick & Davis, *supra* note 20 ("Clear-cutting in December near Rockaway Beach's Jetty Creek, where 90% of the watershed has been logged in the last 20 years [and] Portland-based Stimson Lumber is now clearing some of the remaining older trees.").

611 Schick, *supra* note 605.

612 *See* Schick & Davis, *supra* note 20.

report was never published due to political outcry from timber industry interests.[613]

In 2021, Oregon's Secretary of State launched an audit to explore damage to drinking water sources from private logging practices.[614] Previously, an extensive report from OSU scientists, *Trees to Tap*, made extensive findings and recommendations.[615] In a survey of Community Water Systems conducted by OSU scientists, one of the top three concerns identified by system operators was "forest harvest and management."[616] Water providers expressed concern over their lack of control over watershed activities affecting water quality, including use of forest chemicals as well as logging activities that could trigger landslides and increase water temperatures.[617]

In the Bull Run watershed, which remains the source of drinking water for the City of Portland, logging is banned due to a special management unit designation by the Forest Service.[618] The protection came after logging practices terribly damaged the city's water supplies. Indicative of the long-lasting nature of such damage, the soil exposure from past practices continues to cause sediment runoff that compromises the ability of the water bureau to provide water, leading to periodic, temporary shutdowns of the water source.[619] As one scholar observes, "[Bull Run] is a legacy of watershed mismanagement and failed stewardship. Centuries will pass before the watershed is fully restored to its pre-logged grandeur."[620]

ii. Harm to Species and Biodiversity

The preeminent ecologist, Edward O. Wilson, famously said, "The one process ongoing in the 1980s that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. This is the folly our descendants are least likely to

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613 Schick, *supra* note 605 (reporting that the DEQ's unpublished draft report concluded that "clearcut timber harvesting is known to increase landslide rates on steep slopes and increase streamflows and erosion"). Schick also notes that the timber industry continues to deny any link between forest loss and turbidity. *Id.*

614 Fagan Report on Logging Impact on Water Sources.

615 *See generally* TREES TO TAP, *supra* note 60.

616 *Id.* at 48.

617 *Id*. at 45.

618 Douglas W. Larson, *The Battle of Bull Run*, 97 AM. SCIENTIST 182, 184 (2009).

619 *Id.* ("The shutdowns, lasting two weeks or longer, are becoming a yearly occurrence.").

620 *Id*.

forgive."[621] Oregon's iconic (yet threatened and endangered) salmon and steelhead provide a wrenching example of the harm to species from logging.[622] Salmon follow a complex life cycle that has been fine-tuned over five million years. It begins with spawning and egg incubation (in redds), then progresses into fry emergence, followed by the juveniles taking early refuge in forest streams, then, as smolts, migrating out to the ocean, and—for those that survive—reverse-migrating back to the forest streams of their birth to spawn and start a new cycle of life. The species has evolved in careful partnership with its natal waters and the trees that secure those waters. The tree canopy is necessary to shade the water and keep its temperature down, and the tree roots hold the soil from eroding. The forest also provides nutrition to the ocean-migrating baby salmon, by altering the chemistry of the soil which in turn determines the mineral composition of the waters. In symbiotic fashion, the nutrient cycle of the forest is connected to the salmon cycle. Salmon and steelhead returning to their birth streams bring the forest a marine nutrient subsidy from their spawned-out carcasses containing ocean nutrients that are distributed by various forest animal dwellers: in fact, the salmon are thought to provide the "largest single pulse of nitrogen fertilizer during the year."[623]

Amidst this delicate cycle of life, salmon and steelhead confront an existential threat from logging operations which obliterates the forest ecosystem.[624] Recent research indicates that, assuming a constant for other harmful factors, logging would have been responsible for a 97% decrease in the number of steelhead born per mother fish.[625] Moreover, this severe decline of returning fish to the forest causes a situation of nutrient impoverishment in the forest—perhaps greater than 90%

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621 EDWARD O. WILSON, NATURE REVEALED: SELECTED WRITINGS, 1949–2006 (2006).

622 *See generally* BLUMM, *supra* note 9, at 192 (explaining how "considerably more lenient" logging regulations in Oregon pose "significant problems" for salmon).

623 David Suzuki, *Beyond the Species at Risk Act: Recognizing the Sacred*, 22 J. ENV'T L. & PRAC. 239, 248 (2011).

624 *See generally* BLUMM, *supra* note 9, at 192 ("Logging, particularly clearcut logging, poses significant problems for salmon recovery . . . ."); *see generally Oregon Clearcuts Endanger Salmon Even More Than You Think*, OR. WILD: OR. WILDBLOG (Jan. 6, 2020, 10:35 AM), https://oregonwild.org/about/blog/oregon-clearcuts-endanger-salmon-even-more-you-think [https://perma.cc/JC63-RBJY] (explaining how clear-cutting forests and subsequent young tree farms negatively affect river health and salmon populations).

625 Kyle L. Wilson et al., *Marine and Freshwater Regime Changes Impact a Community of Migratory Pacific Salmonids in Decline*, 28 GLOB. CHANGE BIOLOGY 72, 78–79 (2022) ("Given that logging activities intensified over the 40 years, the predicted marginal effects of logging (all else equal) was a 97% decline in Steelhead smolts produces per adult female.").

reduction of the "original marine nutrient subsidy" reaching the forest ecosystems in coastal areas.[626] Some scientists worry that disruption of this nutrient cycle "could cause a downward spiral in freshwater ecosystems and a shift to a persistent low-productivity regime that is resistant to salmon recovery."[627]

Of course, clear-cutting may also wipe out necessary habitat for species such as spotted owls, Pacific salamander, marbled murrelet, and a myriad of others. As an investigative story on Oregon forest management concludes, "The consequences of Oregon's logging practices are clear. State and federal scientists have blamed major population declines in species including the coastal Coho salmon, northern spotted owl and marbled murrelet on timber harvesting and state policies governing it."[628] In 2015, federal agencies disapproved Oregon's Coastal Nonpoint Source Pollution Control Program (under the Coastal Zone Management Act) for failure to demonstrate, apparently since 1998, an ability to control polluted runoff from logging sufficient to protect water quality and cold-water fish species in the rivers.[629] The state's failure to control logging pollution resulted in forfeiture of federal funds amounting to $8,171,040[630]—money that could have been spent on ecological recovery.

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626 *See* Heather L. Reynolds & Keith Clay, *Migratory Species and Ecological Processes*, 41 ENV'T L. 371, 384 (2011). The authors write:

> [A]nalyses suggest that severe declines in salmon abundances in the Pacific Northwest (Washington, Oregon, Idaho, and California) over the past century has led to a *greater than 90% reduction* in the original marine nutrient subsidy reaching those coastal ecosystems, which raises concerns whether the loss of this supporting service could prevent system recovery.

Id. (emphasis added). Reynolds and Clay refer to an earlier study that indicated "only 5% to 7% of the marine-derived nitrogen and phosphorus previously delivered to the rivers of the Pacific Northwest now reach those waters." *Id.* at n.103 (quoting Ted Gresh et al., *An Estimation of Historic and Current Levels of Salmon Production in the Northeast Pacific Ecosystem*, 25 FISHERIES 15, 15 (2000)).

627 Daniel L. Bottom et al., *Reconnecting Social and Ecological Resilience in Salmon Ecosystems*, 14(1) ECOLOGY & SOC'Y 1, 9 (2009).

628 Davis, *supra* note 292.

629 *See* Complaint for Declaratory and Injunctive Relief at ¶¶ 63–64, Northwest Env't Advocs. v. NMFS (2021) (No. 3:21-cv-01591) (asserting that Oregon authorities had promised, in a settlement of a case brought under the Coastal Zone Management Act, that they would directly regulate logging activities through a mechanism in the Clean Water Act (TMDLs), but state officials later recanted on that promise and failed to control non-point source pollution from logging).

630 *Id.* ¶ 64.

iii. Harm to the Atmosphere and Climate System

Forests form an integral part of the Earth's carbon cycle, drawing CO_2 from the air and sequestering carbon, mostly in their trunks.[631] When trees are logged, they decompose and release carbon dioxide back to the atmosphere. Increasingly, logging in the United States is viewed as a significant form of atmospheric pollution, on par with yearly emissions from its combined residential and commercial sectors.[632] A 2016 study found that logging in U.S. forests emits approximately 617 million tons of CO_2 annually, as well as an additional 106 million tons from the corollary fossil fuel consumption involved with transporting and processing wood.[633] A study of Oregon reported that timber harvests in the state accounted for more than (on average) thirty-three million metric tons of carbon dioxide equivalent per year since 2000, making it the largest source of carbon dioxide emissions in the state.[634] Another study found that 65% of the carbon from Oregon forests logged over the past 115 years still remains in the atmosphere.[635]

Clearly, while logging was formerly viewed as simply a natural resource use, it now must be viewed as a polluting activity that damages a vital public trust resource—the atmosphere and its associated climate system. Consequently, when agency trustees consider logging proposals, they must weigh their duty to protect the atmosphere along with the other public trust resources examined above, such as navigable

631 *Photosynthesis in the Forest*, OR. FOREST RES. INST., https://oregonforests.org/node/82 [https://perma.cc/T3T8-U7PH] ("Photosynthesis is a natural process by which trees and plants use energy from the sun and carbon dioxide from the air to make the food they need to live and grow.").

632 Letter from 200 Leading Climate Scientists to Members of Congress (May 13, 2020), https://96a.96e.myftpupload.com/wp-content/uploads/2020/05/200TopClimateScientistCongressProtectForestsForClimateChange13May20.pdf [https://perma.cc/4R4E-TVX3] [hereinafter Letter from 200 Leading Climate Scientists].

633 *Id.* at 1. (citing N.L. Harris et al., *Attribution of Net Carbon Change by Disturbance Type Across Western Lands of Conterminous United States*, 11 CARBON BALANCE & MGMT. 24 (2016); INGERSON, A., U.S. FOREST CARBON AND CLIMATE CHANGE, THE WILDERNESS SOCIETY (2007)).

634 *See* Law et al., *supra* note 57; *see also* JOHN TALBERTH, OREGON FOREST CARBON POLICY SCIENTIFIC AND TECHNICAL BRIEF TO GUIDE LEGISLATIVE INTERVENTION 1 (2017). Notably, however, the state does not report GHG emissions from the forest sector, though it reports emissions associated with agriculture. *See* Law et al., *supra* note 57, at 3666 (calling for state reporting of timber harvest emissions).

635 Letter from 200 Leading Climate Scientists, *supra* note 632, at 1 (citing Tara W. Hudiburg et al., *Meeting GHG Reduction Targets Requires Accounting for all Forest Sector Emissions*, 14 ENV'T RSCH. LETTERS 095005 (2019) (reporting also that only 19% of carbon from logged forests in Oregon is stored in wood products)).

waters, drinking water sources, fisheries, and wildlife. But beyond polluting the atmosphere, forest harvest also wipes out one of the most powerful natural engines of sky cleanup by removing trees that could continue to draw down legacy atmospheric carbon.[636] That shift toward managing trees for carbon storage rather than harvest is discussed below in Part VII.

b. Roadbuilding

Harvest operations come with logging roads, often carved into steep slopes. These roads may cause or contribute to sediment runoff events that substantially impair downstream rivers, including navigable waterways that are recognized public trust resources.[637] While the damage from roading is often hard to separate from that caused by clear-cutting, generally speaking, roading operations account for ninety percent of the sediment pollution to streams from logging operations.[638] A study of one Willamette National Forest watershed concluded that "roads triggered forty-one times more debris torrents than intact forest," while a study of a different Oregon watershed pointed toward a 130-fold increase in debris torrents; a broader overview encompassing multiple watersheds found a 25- to 340-fold increase.[639]

Forest roads associated with clear-cuts have been identified as serious risk factor in landslides.[640] The OSU research report *Trees to Tap* indicates that landslides increase in frequency and magnitude as a result of forest harvesting and forest road construction.[641] One analysis

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636 Letter from 200 Leading Climate Scientists, *supra* note 632, at 1 (advocating for "a new and more scientifically sound direction . . . that emphasizes increased forest protections . . . to help mitigate the climate crisis").

637 *See* Clarren, *supra* note 83; *see also infra* notes 639, 646–47.

638 *Nonpoint Source: Forestry*, EPA (Nov. 16, 2021), https://www.epa.gov/nps/nonpoint-source-forestry [https://perma.cc/6FB8-GU3L].

639 NORSE, *supra* note 41, at 175.

640 Tom Brune, *Oregon Mudslides Prompt Renewed Debate on Land Use*, CHRISTIAN SCI. MONITOR (Dec. 27, 1996), https://www.csmonitor.com/1996/1227/122796.us.us.4.html [https://perma.cc/B2Z5-HDNV] ("Clear-cutting and road construction may make a landslide occur as much as five to 20 times more often than on a forested site," citing Gordon Grant, researcher with U.S. Forest Service's Pacific Northwest Research Station.).

641 *See generally* Kevin Bladon & Jeff Behan, *Sediment and Turbidity*, *in* TREES TO TAP, *supra* note 60, at 140–41 ("Many studies have found that unpaved haul roads in steep, unstable terrain can increase the occurrence of mass movements by 25 to 350 times. . . . It has been estimated that forest harvesting and forest road construction can increase the densities of landslides impacting streams and the delivery of sediment to stream channels due to mass movement events by about 0.6-138-fold." (citations omitted)); *id.* at 289 ("In

of the connection between clear-cutting, roads, and landslides summarized twenty-one data sets in scientific studies examining Oregon[642] and concluded from the inventory, "clearcuts and forest roads are associated with dramatic increases in both the number of slides and the volume of slides relative to natural forest conditions."[643] Tabulating the relative rate of landslide initiation—in forested areas, clear-cut units, and roaded rights of way—the table reflected often dramatically higher rates of landslide initiation in the roaded areas, with one roaded area on the Willamette National Forest reaching 705 times the rate of forested areas. Explaining the dynamics of increased landslide risk, the analysis states:

> Roadbuilding completely disrupts the natural soil profile. Heavy equipment creates large amounts of unconsolidated soil that is often "sidecast" along miles and miles of roadway. This sidecast material can overload and "oversteepen" already steep slopes. Road building disrupts subsurface drainage, turning subsurface flow into surface flow, and often creates dangerous areas of water concentration.[644]

Logging practices were investigated in connection with the tragic landslide that buried the town of Oso, Washington in 2014, killing forty-three people. The hillside above the town was heavily cut over by timber companies, and while multiple factors may have contributed to the tragedy, a University of Washington report identified logging as a possible factor.[645] Families of the victims sued both the state of Washington and a private timber company that logged an area above the landslide, and in 2016, the suit settled for $60 million.[646]

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steep terrain, landslides and debris flows have been identified as the primary sources of sediment inputs into streams and have been consistently shown to significantly increase in response to forest harvesting and forest roads in such terrain.").

642 Doug Heiken, *Landslides and Clearcuts: What Does the Science Really Say?*, OR. WILD, https://oregonwild.org/sites/default/files/pdf-files/Heiken%2C%20D.%20Landslides%20and%20clearcuts%20-%20science.pdf [https://perma.cc/4T5V-KSFR] (inventorying "the relative number and volume of landslides in forested areas compared to harvested areas and roadways in the Pacific Northwest").

643 *Id.*

644 *Id.*

645 Warren Cornwall, *Causes of Deadly Washington Mudslide Revealed in Scientific Report*, NAT'L GEOGRAPHIC (July 24, 2014), https://www.nationalgeographic.com/science/article/140722-oso-washington-mudslide-science-logging [https://perma.cc/XK3X-D2E4] ("While the report doesn't definitively point a finger at the timber industry, it suggests that logging above the slide area might have changed the way rain soaked into the hillside, adding more water to the unstable slope.").

646 Gene Johnson, *State, Logging Company Settle for $60 Million in Oso Landslide Suit*, KOMO NEWS (Oct. 10, 2016), https://komonews.com/news/local/proposed-50-million-settlement-reached-in-oso-landslide-suit [https://perma.cc/VZ74-STC5].

c. Chemical Spraying

As noted earlier, a standard practice of industrial forestry is to spray the cut-over lands with chemicals to discourage pests and unwanted vegetation. Helicopters spray hundreds of thousands of pounds of chemicals on private timberlands in Oregon each year.[647] While discussed more extensively with respect to the trustee's duty of precaution, regulating chemical spray also involves the basic duty of protection toward public trust assets—water and wildlife in particular.

While chemical treatments are generally confined to private industrial timberlands (as they have been banned on federal lands), in reality, the spray can cross over private boundary lines in two ways due to natural chemical transport processes: by wind and by water. Transportation by wind involves "drift" along the air currents.[648] Well known in the forest context, EPA describes drift as "the movement of pesticide dust or droplets through the air at the time of application or soon after, to any site other than the area intended."[649] Transportation can also occur through water. Watersheds in the coastal range move rainwater from hills to streams. As the rainfall covers the hills, it can pick up chemicals and transport them into downstream and downslope waterways.[650] Whether such chemicals arrive in public trust waters in an amount sufficient to cause "substantial impairment" is a factual, context-specific question—but certainly not one to be ignored by the state trustees. In a different but analogous context, the Ninth Circuit recognized legal responsibility for pollutants transported by natural process from private, non-tribal property within an Indian reservation to adjacent tribal lands. Affirming tribal regulatory jurisdiction over activities on the non-tribal land, the Ninth Circuit stated in *Montana v. EPA*:

> Due to the mobile nature of pollutants in surface water it would in practice be very difficult to separate the effects of water quality impairment on non-Indian fee land from impairment on the tribal portions of the reservation: "A water system is a unitary resource.

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647 Clarren, *supra* note 83.

648 *See id.*; *see also* Heiken, *supra* note 642.

649 *See Introduction to Pesticide Drift*, EPA.GOV, https://www.epa.gov/reducing-pesticide-drift/introduction-pesticide-drift [https://perma.cc/2FCG-EMTL]. An investigative report explores drift in the context of Oregon timberland spraying. *See* Schick, *Flaws in Oregon's Pesticide Regulation*, *supra* note 277.

650 *See* Jon Souder & Bogdan Strimbu, *Forest Chemicals*, *in* TREES TO TAP, *supra* note 60, at 199; *see also* Clarren, *supra* note 83 ("The gravel roads that crisscross this forest and most other timberland act as vectors, delivering any herbicides deposited by helicopter into ditches along the roads, which ultimately empty into the streams.").

> The actions of one user have an immediate and direct effect on other users."[651]

d. Tree Plantations

Monoculture plantings characteristic of industrial forestry inflict an obvious blow to biodiversity, both by replacing a diverse array of tree species with a uniform type and by destroying the habitat for a multitude of animal species. But beyond that palpable effect, two other harms bear discussion: fire spread and water consumption.

i. Fueling Fire Spread

Increasingly, tree plantations that sprout in the wake of industrial clear-cuts draw attention for their potential role in fueling catastrophic wildfire. The clear-cuts themselves may create accelerated wind conditions conducive to rapid conflagration spread,[652] but beyond that, as a letter from leading scientists to members of Congress states, "recent evidence shows intensive forest management characterized by young trees and homogenized fuels burn at higher severity."[653] As one

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651 Montana v. EPA, 137 F.3d 1135, 1141 (9th Cir. 1998) (affirming authority of the Confederated Salish and Kootenai Tribes to regulate private (non-Indian) fee lands within Reservation because activities on such lands posed "such serious and substantial threats to Tribal health and welfare that Tribal regulation was essential[]").

652 *See* Alexander Harris et al., *Analyzing Whether Forest Management Practices Influenced Oregon's Labor Day Fires*, FUSEE: WILDFIRE MONITORING PAGE (Mar. 20, 2021), https://static1.squarespace.com/static/5e2c7d5a807d5d13389c0db6/t/60834fbc90c9ed3251ec8907/1619218392073/Labor+Day+Fires+Analysis+%28Harris+et+al.+April+2021%29+FINAL+%281%29.pdf [https://perma.cc/E4LD-K625] (summarizing Atchley study, *infra*, stating, "[C]learcuts in western Oregon, which regularly measure over 100 acres in size, lead to accelerated wind currents—thereby contributing to quicker rates of spread"); *see also*, *generally*, Adam Atchley et al., *Effects of Fuel Spatial Distribution on Wildland Fire Behavior*, 30 INT'L J. WILDLAND FIRE 179 (2021) (analyzing fire behavior as affected by fuel distribution across landscape).

653 Letter from 200 Leading Climate Scientists, *supra* note 632; *see also* Letter from 215 Environmental Scientists Opposing Farm Bill to Congress (Aug. 27, 2018), https://democrats-naturalresources.house.gov/imo/media/doc/Letter%20From%20215%20Envrionmental%20Scientists%20Opposing%20Farm%20Bill%20Aug.%2027%202018.pdf [https://perma.cc/NS9W-6QSL] ("Proposals to remove environmental protections to increase logging for wildfire concerns are misinformed. For instance, scientists recently examined the severity of 1,500 forest fires affecting over 23 million acres during the past four decades in 11 western states. They found fires burned more severely in previously logged areas, while fires burned in natural fire mosaic patterns of low, moderate, and high severity, in wilderness, parks, and roadless areas, thereby, maintaining resilient forests."); Daniel Gavin, *In Oregon's 2020 Fires, Highly Managed Forests Burned the Most*, FUSEE: SPOTFIRE BLOG, https://fusee.org/fusee/oregons-2020-fires-highly-managed-forests-burned-the-most [https://perma.cc/SN9W-BFRM] ("[S]tudies demonstrate that in checkerboards of young,

analysis explains, "plantations tend to be composed of small-diameter trees with thin bark and low crown heights, both of which contribute to increased risk of high severity fire."[654] The small-diameter fuel in young plantations is also more easily dried by winds and preheated by approaching fire.[655] Conversely, a large-scale study of California fires found "strong evidence" that variable forest structure (not characteristic of plantations) generally makes the Sierra Nevada forests more resistant to wildfire.[656] Another study of California fires over three decades found that high-severity wildfires were 1.8 times more likely to occur on private industrial forestlands (which characteristically grow tree plantations) than public lands that were more protected from logging.[657]

Additional research is needed to conclusively determine that clear-cuts and plantations in the Pacific Northwest may generally contribute to faster rates of wildfire and increased burn severity, but emerging studies suggest a link.[658] One study found that, in Oregon's devastating 2020 western Cascades fires, over 70% of the burned areas were in lands managed with clear-cut rotation forestry.[659] A 2022 study from Portland State University scientists analyzing factors in the 2020 Oregon mega-fires found that while wind was a major driver of the fires, vegetative structure (often determined from harvest methods) had a significant effect on the outcome as well. It found: "Early-seral forests primarily concentrated on private lands, burned more severely than their older and taller counterparts, over the entire mega-fire event regardless of topography. Meanwhile, mature stands burned severely

private plantation forests and older federal forests, fires in the timber plantations burn hotter and consume more soil.").

654 Harris et al., *supra* note 652.

655 *See* Gavin, *supra* note 653 (also stating, "Plantations are loaded with such fuel . . . result[ing] in fire spread rates on the order of three feet per second").

656 Michael J. Koontz et al., *Local Forest Structure Variability Increases Resilience to Wildfire in Dry Western U.S. Coniferous Forests*, 23 ECOLOGY LETTERS 483, 489 (2020).

657 Jacob I. Levine et al., *Higher Incidence of High-Severity Fire in and Near Industrially Managed Forests*, 20 FRONTIERS ECOLOGY & ENV'T 397, 400 (2022); *see also infra* notes 847–49 discussing study.

658 Harris et al., *supra* note 652.

659 *See* Gavin, *supra* note 653 ("This landscape's makeup is prescribed by the Oregon Forest Practices Act: 120-acre clearcuts are spaced 300 feet apart with tree buffers along streams, roadsides, and for wildlife; trees are replanted within two years at high densities; broadleaf shrubs and trees are routinely killed by herbicides.").

only under extreme winds and especially on steeper slopes."[660] As one fire analyst explained fire behavior in the 2020 mega-fires, "large gaps with little-to-no vegetation were especially conducive to rapid fire progression" and other research suggests that "plantations may contribute to faster rates of wildfire spread when compared to more heterogeneous, complex forests."[661] In an earlier study of the Douglas Complex fires of 2013, researchers concluded: "After accounting for fire weather, topography, stand age, and pre-fire biomass, *intensively managed private industrial forests burned at higher severity* than older federal forests managed by the BLM."[662] The authors summarized, "in the landscape we studied, intensive plantation forestry appears to have a greater impact on fire severity than decades of fire exclusion."[663]

ii. Reduced Streamflows and Water Quantity

Another serious consequence of tree plantations is their draining effect on public water supplies. Emerging science shows diminished water quantity in Oregon watersheds that replaced old growth forest with tree plantations—which consist of thirsty growing trees. The 2020 OSU report, *Trees to Tap*, concludes: "Stands of conifers established after clear-cut harvest can, once they are 15–20 years old and growing quickly, significantly and persistently reduce summer low flows in comparison to the stands they replaced."[664] A 2016 analysis by OSU scientists Timothy Perry and Dr. Julia Jones examined sixty years of daily streamflow records from the Andrews Experimental Forest and concluded that "the conversion of old-growth forest to Douglas-fir plantations had a major effect on summer streamflow," diminishing it

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660 Cody Evers et al., *Extreme Winds Alter Influence of Fuels and Topography on Megafire Burn Severity in Seasonal Temperate Rainforests Under Record Fuel Aridity*, 5 FIRE 41, 1 (2022). The authors explained, "While different findings may emerge when determining drivers of all severity classes of the 2020 mega-fires, in general, private industrial lands had less canopy closure and shorter-stature forests, which reduces thermal buffering and increases ground-to-canopy connectivity, thus making young forests particularly susceptible to widespread mortality, i.e., the probability of high-burn severity." *Id.* at 11. The authors noted that similar results were reported in SW Oregon, "as well as in moist forests elsewhere," explaining, "Broad shifts in US industrial forestry have shortened harvest rotations which has increased the vulnerability of these forests." *Id.*

661 *See* Harris et al., *supra* note 652.

662 Harold Zald & Christopher Dunn, *Severe Fire Weather and Intensive Forest Management Increase Fire Severity in a Multi-Ownership Landscape*, 28 ECOLOGICAL APPLICATIONS 1068, 1075 (2018) (emphasis added).

663 *Id.* at 1077.

664 Souder & Behan, *supra* note 60, at 287.

by as much as 50%.[665] A subsequent 2020 study of the Alsea Watershed presented parallel findings of a 50% drop in summer stream flows associated with tree plantations as compared with historic old growth and showed "low flow deficits" persisting for six months or more out of the year.[666] Results of this Alsea study indicated that forty- to fifty-year rotations of Douglas-fir plantations can produce persistent, large summer low flow deficits.[667]

An analysis of the 2016 Perry and Jones study by Dr. Christopher Frissell summarizes the stark conclusions of this research: "The study suggests summer, fall and early winter streamflows are today dramatically depleted on a widespread basis across western Oregon and the Pacific Northwest as a consequence of extensive logging and vegetative regrowth in plantations following logging."[668] The relevance of these conclusions to the public trust are clear because the navigable waters of the state are recognized public trust resources, even within the restrictive *Chernaik* interpretation. Practices that dramatically deplete flows (again, by as much as 50% per the studies' estimation) manifest "substantial impairment" of this essential resource. Naturally too, the reduced flows also affect the resident fisheries in the impaired streams.[669] That the agency trustees allow such practices to continue in face of climate disruption—predicted to bring radically hotter temperatures and drier conditions—appears legally indefensible as judged by basic fiduciary standards of care.

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665 *See* Timothy D. Perry & Julia A. Jones, *Summer Streamflow Deficits from Regenerating Douglas-fir Forest in the Pacific Northwest, USA*, 10 ECOHYDROLOGY 1790, 1790 (2016) ("Average daily streamflow in summer (July through September) in basins with 34- to 43-year-old plantations of Douglas-fir was 50% lower than streamflow from reference basins with 150- to 500-year-old forests dominated by Douglas-fir, western hemlock, and other conifers.").

666 Catalina Segura et al., *Long-term Effects of Forest Harvesting on Summer Low Flow Deficits in the Coast Range of Oregon*, 585 J. HYDROLOGY 124749, 1 (2020).

667 *Id.* at 2 ("Long-term declines in low flows associated with forest harvesting and plantations raise concerns about aquatic ecosystem health and water supply, especially in dry years.").

668 Memorandum from Dr. Christopher A Frissell, Principal Scientist, Frissell & Raven Hydrobiological & Landscape Sciences, "Implications of Perry and Jones, (2016) study of streamflow depletion caused by logging for water resources and forest management in the Pacific Northwest" 1 (Jan. 27, 2017), https://oregon-stream-protection-coalition.com/wp-content/uploads/2015/06/Frissell-memo.pdf/ [https://perma.cc/M3EV-AM3L] (offering policy recommendations for Oregon forest managers).

669 *Id.* at 4–5 (stating that "[s]ustained 50 percent depletion of summer and fall low flows reduces survival and potential production of salmon in trout Pacific Northwest streams").

2. The Duty Against Waste: Conserve the Natural Inheritance of Future Generations

The duty against waste turns the focus to future generations, obliging government to sustain the ecological wealth of the trust so that the beneficiaries to come will inherit an undiminished res. This duty thus encompasses a principle of intergenerational equity. The Philippines Supreme Court declared this principle in the *Oposa v. Factoran* case, stating: "[E]very generation has a responsibility to the next to preserve that rhythm and harmony [of Nature] for the full enjoyment of a balanced and healthful ecology."[670] There, the Court found a government program that would have allowed private timber companies to log the nation's last ancient forests violated the rights of youth and their descendants to a balanced and healthful ecology.[671] The federal district court in the pathbreaking American youth climate case, *Juliana v. United States*, also underscored the waste principle when it said, "The government, as trustee, has a fiduciary duty to protect the trust assets from damage so that current and future trust beneficiaries will be able to enjoy the benefits of the trust."[672] And the Hawaii Supreme Court articulated this principle when it emphasized that the state has a "duty to ensure the continued availability and existence of its water resources for present and future generations."[673]

This legal doctrine presents a powerful counterweight to the persistent political tendency of government officials to overindulge the living generation (because these are the people who vote and make campaign contributions) at the expense of future citizens (who have no political clout at all). This fiduciary duty obligates trustees to ensure that the current generation does not use more than a replenishing share of renewable trust resources or cause irreparable damage to those resources, either of which would infringe on the rights of future generations.[674] Put differently, the trustee cannot raid the trust inheritance and dwindle it or leave nothing for future generations. President Roosevelt expressed this duty in his speech to the first National Conservation Convention (a convening of U.S. governors) in 1908:

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670 Oposa v. Factoran, G.R. No. 101083, 224 S.C.R.A. 792, 803 (July 30, 1993) (Phil.).

671 For further discussion of the case, *see supra* notes 502–11 and accompanying text.

672 Juliana v. United States, 217 F. Supp. 3d 1224, 1254 (D. Or. 2016), *rev'd on other grounds and remanded*, 947 F.3d 1159 (9th Cir. 2020).

673 *In re* Water Use Permit Applications, 9 P.3d 409, 451 (Haw. 2000).

674 WOOD, *supra* note 22, at 170–73. The matter of nonrenewable resources is subject to a different analysis of allocating equitably between generations. *See id.*

> In the past we have admitted the right of the individual to injure the future of the Republic for his present profit. The time has come for a change. As a people we have the right and the duty, second to none other but the right and duty of obeying moral law, of requiring and doing justice, *to protect ourselves and our children against the wasteful development of our natural resources*, whether that waste is caused by the actual destruction of such resources or by making them impossible of development hereafter.[675]

Analogizing the public trust to a private trust, the duty against waste dictates that the "interest" of natural resources may be utilized, but the "principal" cannot be spent. In other words, the natural systems that provide ecological services to current beneficiaries may be used—trees can be cut, fish caught, and water diverted—but their use is limited to the extent that these natural systems can replenish of their own accord without diminishing their basic functions and values, so that they will not be left substantially impaired for future generations. The waste principle is readily applicable to forests, and in fact is reflected in statutory commands to achieve "sustained yield" of a forest—so as not to invade the natural capital.[676]

The waste principle would prohibit significant clear-cut harvest. The argument that "even-aged management" (another term for clear-cutting) does not violate the waste principle—because the trees will grow back in decades or centuries—stands absurd, because the time frame required for full ecological recovery and biodiversity restoration through regrowth skips the intervening generations who are deprived of the forest benefits. Because forests, as complex ecological units, take so long for Nature to recreate, forest destruction should always trigger a rigorous waste inquiry on the part of the sovereign trustees.

The anti-waste principle scales from the planetary level down to the most localized level. On the planetary level, the waste principle protects forests as engines of carbon sequestration needed to clean the Earth's atmosphere and thereby bequeath Posterity a habitable planet. The premium on trees is much greater in today's world than in past eras due to the rank urgency of climate change—precisely why international

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675 Report of the Oregon Conservation Commission to the Governor, *supra* note 388, at 5 (emphasis added).

676 National Forest Management Act of 1976, 16 U.S.C. §§ 1600, 1611; OCLA, 43 U.S.C. § 2601; *see also supra* note 142 and accompanying text; Scott & Brown, *supra* note 134, at 275 (summarizing House Report accompanying the OCLA legislation which aimed to limit harvest so as to "avoid 'depletion of the forest capital'").

agreements pledge forest protection to stabilize the climate system.[677] Given the magnified importance of mature and old-growth forests to provide carbon storage as well as supply vital reservoirs of global biodiversity,[678] cutting these older forests seems, as a categorical matter, to violate the trustee's duty against waste.[679] Yet, despite these planetary imperatives, the Forest Service continues on that path with highly controversial projects. One, known as the Flat Country Project, proposed logging across 4,500 acres of the McKenzie River watershed east of Eugene, including up to 1,000 acres of mature forest that held trees exceeding eight feet in diameter.[680] Reflecting the trustee's solemn duty to guard against waste, President Biden announced a plan to protect all old growth in federal forestlands and BLM lands in an Executive Order issued on Earth Day, April 22, 2022.[681] The high-level policy decision prompted Forest Service officials operating in Oregon to withdraw and reconsider the offending Flat Country Project.[682]

The waste prohibition remains important at the local level, too: individual old or mature trees might provide such glorious or crucial benefits to a community that their destruction would cause "waste" to

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677 *See The Evidence Is Clear: The Time for Action Is Now. We Can Halve Emissions by 2030*, IPCC (Apr. 4, 2022), https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/ [https://perma.cc/7G2U-X9CX] [hereinafter *The Evidence is Clear*]; Wood, *supra* note 53; citations at *supra* note 55 and accompanying text (describing international agreements).

678 *See* Polly C. Buotte et al., *Carbon Sequestration and Biodiversity Co-Benefits of Preserving Forests in the Western United States*, 30 ECOLOGICAL APPLICATIONS (2020) ("We found that high-carbon-priority forests in the western United States exhibit features of older, intact forests with high structural diversity, including carbon density and tree species richness."); *see also* Law et al., *supra* note 42 (identifying high carbon forests in Western U.S. that are valuable for biodiversity and water supply and are more resilient to climate change); Law et al., *supra* note 78, at 10 (stating that "[t]he PNW and Alaska stand out as having mature and old forests with immense carbon stores and high biodiversity" and explaining that mature and old forests store more carbon than young forests and "continue to accumulate it over decades to centuries"); Hudiburg et al., *supra* note 639.

679 *See supra* Section V.3.b. examining forest carbon storage in the context of the trustees' duty to maximize value to the beneficiaries of the trust.

680 Zach Urness, *Forest Service Withdraws Timber Project Decision Near Eugene Over Big Tree Cutting*, STATESMAN J. (Dec. 30, 2022), https://www.statesmanjournal.com/story/news/2022/12/30/forest-service-withdraws-decision-on-timber-project-near-eugene/69765496007/ [https://perma.cc/LG5Q-YQMX].

681 *See* Exec. Order No. 14,072, 87 Fed Reg. 25851, 25851 (Apr 22, 2022) (stating that the reason behind the protective order was "[t]o further conserve mature and old-growth forests . . . for the benefit of Americans today and for generations to come"); *see also* Laura Benshoff, *Biden Will Order a Study of Old-Growth Forests in an Earth Day Executive Action*, NPR (Apr. 22, 2022, 5:01 AM), https://www.npr.org/2022/04/22/1094111656/biden-will-order-a-study-of-old-growth-forests-in-an-earth-day-executive-action [https://perma.cc/J2JY-SZ3N].

682 Urness, *supra* note 680.

future members of that community who would be deprived of their benefit. One palpable example comes from the West Bend Project in the Deschutes National Forest where, in Spring 2022, the Forest Service allowed a private contractor to cut about thirty large Ponderosa Pines in an area that provided outstanding recreational hiking and mountain biking opportunities to thousands of local residents every year.[683] The shade, beauty, and solace that could have been offered by the cluster of trees to the community for perhaps several human lifetimes into the future was, in a mere few days of frenzied chainsawing, completely forsaken with no regard by the Forest Service to the deprivation of principal value from the public's trust.

No matter the scale, the trustee must weigh the interests of future generations in any decision that may destroy important trees or swaths of forest. There may be times when a trustee carefully weighs the interests of present and future generations and decides it must invade the natural capital to meet the most crucial and pressing societal interests, but that probing exercise lands far from the institutionalized disregard that remains characteristic of many modern agencies managing public lands. Oregon's sovereign trustees casually authorize wholesale harvest without any open deliberation on their duty to prevent waste. When forest antiquity is destroyed, "It cannot be built by Nature herself in less than a thousand years, nor indeed ever, for it is never renewed the same."[684]

3. The Duty to Maximize the Value of Trust Resources for the Beneficiaries

Leading cases demand that government trustees manage trust resources to "maximize their social and economic benefit to the people."[685] Competing demands for a resource nearly always exist. In the forest context, the competition often boils down to a zero-sum game between private timber interests and public needs. In the related context of water allocation, cases make clear that trustees must achieve the "highest and best use" of public resources so as to maximize their value

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683 *See* Parks, *supra* note 595.

684 Kerr, *supra* note 390.

685 WOOD, *supra* note 22, at 175; *see also In re* Water Use Permit Applications (*Waiahole Ditch*), 9 P.3d 409, 451 (Haw. 2000) ("In this jurisdiction, the water resources trust also encompasses a duty to promote the reasonable and beneficial use of water resources in order to maximize their social and economic benefits to the people of this state.").

to society.[686] Courts also recognize that public trust uses evolve with changing public values and needs,[687] and that protecting the "natural state" of a resource represents a compelling public trust use[688] for it secures a myriad of purposes such as fish and wildlife habitat, scenery, and water provision.[689] As the Hawaii Supreme Court stated in the context of a water trust: "This court [has] acknowledged resource protection, with its numerous *derivative* public uses, benefits, and values, as an important underlying purpose of the reserved water resources trust."[690]

Often, private interests seeking to exploit trust resources make the sweeping argument that their uses will bring jobs to the community, and that the economic and general tax revenue associated with private use of resources provides an overriding public benefit under the trust. Apart from mounting doubt around that broadly applied assumption,[691] in the *Mono Lake* case, the California Supreme Court said that basing

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686 *Id.* This duty is discussed in WOOD, *supra* note 22, at 175–79.

687 *Waiahole Ditch*, 9 P.3d at 448. In other states, the "purposes" or "uses" of the public trust have evolved with changing public values and needs. The trust traditionally preserved public rights of navigation, commerce, and fishing. *See* Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 452 (1898). Courts have further identified a wide range of recreational uses, including bathing, swimming, boating, and scenic viewing, as protected trust purposes. *See, e.g.*, Neptune City v. Avon-By-The-Sea, 294 A.2d 47, 54-55 (N.J. 1972).

688 *Waiahole Ditch*, 9 P.3d at 448 ("As a logical extension from the increasing number of public trust uses of waters *in their natural state*, courts have recognized the distinct public interest in resource protection." (emphasis added)).

689 *Id.* The *Waiahole* court went on to say:

> One of the most important public uses of the tidelands—a use encompassed within the tidelands trust—is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.

Id. (citing Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 719 (Cal. 1983)).

690 *Id.* (emphasis added) (also noting protection of resources in state constitution, citing HAW. CONST. art. XIXI, §§ 1, 7, and stating, "We thus hold that the maintenance of waters in their natural state constitutes a distinct 'use' under the water resources trust."); *see also* Robinson v. Ariyoshi, 658 P.2d 287, 306 (Haw. 1982) (upholding the public interest in the "purity and flow," "continued existence," and "preservation" of the waters of the state).

691 Recent economic analysis in Oregon suggests that highly extractive timber production can have ill effects on rural economies, and that conserved forestlands would boost community wealth due to the growth in outdoor recreation and the movement of businesses and workers to areas with natural amenities. *See* Ernest G. Niemi, Amicus Brief, Conservation Northwest v. Franz, No. 99183-9 (Wash. S. Ct.) (Sept. 7, 2021), at 27–30 (noting that "counties with more logging have lower median wages, and a higher percentage of the population lives in poverty," and observing a "likelihood that forest conservation would stimulate an increase in jobs and community prosperity"); *id.* at 2 ("Timber production has had negative impacts on rural economies, while managing lands for conservation and restoration would likely strengthen rural economies.").

public trust decisions on claims of general economic benefit would "in practical effect . . . impose no restrictions on the state's ability to allocate trust property."[692] The Hawaii Supreme Court agreed, favoring a "presumption in favor of public use, access, and enjoyment."[693] As that court explained in *Waiahole Ditch*:

> LURF [the entity opposing the public trust doctrine] asserts that the public trust in Hawai'i encompasses private use of resources for "economic development" . . . . While . . . the public trust may allow grants of private interests in trust resources under certain circumstances, they in no way establish private commercial use as among the public purposes protected by the trust. Although its purpose has evolved over time, the public trust has never been understood to safeguard rights of exclusive use for private commercial gain. Such an interpretation, indeed, eviscerates the trust's basic purpose of reserving the resource for use and access by the general public without preference or restriction. . . . We hold that, while the state water resources trust acknowledges that private use for "economic development" may produce important public benefits and that such benefits must figure into any balancing of competing interests in water, it stops short of embracing private commercial use as a protected "trust purpose." . . . To the contrary, if the public trust is to retain any meaning and effect, it must recognize enduring public rights in trust resources separate from, and superior to, the prevailing private interests in the resources at any given time.[694]

Trustees must affirmatively weigh the alternative uses of a trust resource to arrive at a reasoned conclusion as to which maximizes the needs of the public. In face of water scarcity, the Hawaii Supreme Court called for "rigorous and affirmative" public interest review of the

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692 Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 724 (Cal. 1983). Drawing from its tideland trust precedent, the Supreme Court of California asserted, "no one could contend that the state could grant tidelands free of the trust merely because the grant served some public purpose, such as increasing tax revenues, or because the grantee might put the property to a commercial use." *Id.*

693 *Waiahole Ditch*, 9 P.3d at 450. The court continued:

> Post-Māhele water rights decisions ignored this duty, treating public water resources as a commodity reducible to absolute private ownership, such that "no limitation . . . existed or was supposed to exist to [the owner's] power to use the . . . waters as he saw fit" . . . We observe that the constitutional requirements of "protection" and "conservation," the historical and continuing understanding of the trust as a guarantee of public rights, and the common reality of the "zero-sum" game between competing water uses demand that any balancing between public and private purposes begin with a presumption in favor of public use, access, and enjoyment.

Id. at 451, 454 (citations omitted).

694 *Id.* at 449–50 (citations omitted, emphasis added).

water trust.[695] From that review, the state as trustee must engage in a "balancing process" that "inevitably must weigh competing public and private water uses on a case-by-case basis."[696] This analytical rigor required of a trustee guides the often capacious discretion left by statutory schemes. As the court elaborated:

> As such, the [state] must not relegate itself to the role of a mere "umpire passively calling balls and strikes for adversaries appearing before it," but instead must take the initiative in considering, protecting, and advancing public rights in the resource at every stage of the planning and decision-making process. . . . The trust also requires planning and decision-making from a global, long-term perspective. In sum, the state may compromise public rights in the resource pursuant only to a decision made with a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state.[697]

Forest managers and regulators in Oregon characteristically operate within an institutional and cultural frame that portrays the forest as a commodity to be harvested, rather than as public commonwealth to be protected. The discussion below shows why this approach cannot align with the fiduciary responsibility to maximize the benefit of the Oregon Forest Trust in these times of ecological scarcity, biodiversity crisis, and climate emergency.

a. Forest as Commodity or Commonwealth?

The commodity approach to resource management reduces valuable natural commonwealth to an extractable form that is processed on the market as a product, with profits flowing to a private party. In the case of forest, the commodity approach converts a priceless ecosystem to marketable timber. In light of the irreplaceable value of forest ecosystems for water supplies,[698] wildlife habitat, and climate regulation[699]—core needs that only increase in a world of climate chaos—management prioritizing timber production would almost categorically fail to maximize the value of the resource to the public beneficiaries. To put the matter simply: the public loses vast ecological wealth when forest is converted to timber.

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695 *Id.* at 427.

696 *Id.* at 454.

697 *Id.* at 455 (citations omitted, emphasis added).

698 *Id.* at 449 ("Whether under riparian or prior appropriation systems, common law or statute, states have uniformly recognized domestic uses, particularly drinking, as among the highest uses of water resources.").

699 *See supra* Part I.A.1.

The duty to maximize value for the beneficiaries clearly applies, in a straightforward manner, to public forests. That is not to say that public forests may never provide timber for sale. Timber supply may respond to a compelling public need for materials. Thinning harvest may also be warranted to promote forest resilience against fire. But the trustees must carefully weigh these needs against other public needs, and, as the Hawaii Supreme Court made clear, the generic justification of boosting local economies and providing tax revenues from harvest does not suffice to maximize the value of the resource. As climate crisis puts a premium on all remaining natural resources, the valuation of public forests must revise dramatically to account for rapidly shifting societal needs, a paramount one being carbon dioxide sequestration, addressed below.[700]

On nonpublic, private forests, the commodity frame remains particularly entrenched, but for better reason. Private timber companies hold ownership of the forest that covers their land and may claim a prerogative to manage the resource purely as a marketable commodity.[701] The trust duties still apply to government agencies as they regulate the private activities, but the duty requiring maximization of benefit becomes ill-fitting in the context of private forests.[702] However, the other duties explained in this Part have logical and direct application to trustees regulating in this private lands context. Moreover, the urgency of forest protection everywhere cries out for visionary development of a new economic paradigm on private lands reflecting sustainable forestry that can not only bring some economic revenue to the owners but also maximize the potential of the resource to support public needs.[703]

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[700] However, where harvests make sense within this trust paradigm (to supply necessary timber, or to thin acreage for legitimate ecological reasons, for example), it is also clear that the trustees must maximize the revenue gained and not squander the financial return, as has often happened in the past. *See Below-Cost Timber Sales on Federal and State Lands in Oregon: An Update* 1 (Nat. Res. Econ., Working Paper No. 16-04, July 2016) (a study showing today's below-cost timber sales are "far more severe" than prior decades); *see also* Skamania Cnty. v. State, 685 P.2d 576 (Wash. 1984) (finding that the state violated its trust duty by releasing timber companies from contract obligations resulting in potential forsaken revenue of $69.5 million to the state).

[701] To be clear however, all private property rights are subject to regulation. *See* Section III.E.

[702] As this Article has explained, however, the public arguably has a servitude on private lands to protect the forest as an ancillary resource tied to the traditionally recognized public trust assets. *See* discussion *supra* Sections III.E., IV.B. As such, the analogy may be made to privately owned streambeds along navigable waters in which the private owner holds *jus privatum* and the public holds *jus publicum*. *See* discussion *supra* Section Part III.E.

[703] *See infra* Part IV.A.3.

b. Forest as Engines of Sky Cleanup

The climate emergency must frame the trustees' duty of maximizing public benefit from the forest trust. As the United Nations Intergovernmental Panel on Climate Change (IPCC) reported in April 2022, the world's climate target is rapidly moving out of reach, making measures to draw down legacy atmospheric carbon all the more urgent.[704] Forests stand positioned to achieve massive drawdown of carbon dioxide and sequester carbon naturally, for perhaps centuries.[705] Moreover, forests are "carbon ready"—deploying a forest sequestration strategy does not require new infrastructure or technology, as would mechanical carbon removal.[706] One team of scientists observed, "Forest protection is the lowest cost climate mitigation option."[707] The strategy of forest protection also eliminates harvest as a source of carbon that would be added to the atmosphere. The UN IPCC recognizes this as a core strategy to recover the climate system, and, as noted earlier, it is the aim of international agreements as well.[708] Keeping trees standing "in the ground" parallels another ambitious climate movement to keep fossil fuels "in the ground."[709] In both cases, private exploit of the resource moves the world dangerously closer to triggering climate points of no return.[710] As emphasized in a 2020 letter to Congress from prominent scientists, "we must not only move beyond fossil fuel consumption but must also substantially increase protection of our native forests in order to absorb more CO_2 from the atmosphere and store more, not less, carbon in our forests."[711] Given the stark urgency of climate action and the crucial role of forests

704 *See The Evidence Is Clear*, *supra* note 677.

705 *See* Law et al., *supra* note 195 ("preserving 50% of high priority forests by 2050 would triple the amount of carbon accumulation compared to current levels over the western United States"); Law et al., *supra* note 42, at 3 ("The areas with the highest forest PPRs [preservation priority rankings] are primarily in the mountain ranges . . . particularly in the Pacific Northwest."); *see also* Paul A. Barresi, *Mobilizing the Public Trust Doctrine in Support of Publicly Owned Forests as Carbon Dioxide Sinks in India and the United States*, 23 COLO. J. INT'L ENV'T L. & POL'Y 39 (2012).

706 Law et al., *supra* note 57, at 7.

707 Law et al., *supra* note 42.

708 *See UN Climate Change Conference*, *supra* note 55 (global forest agreement from COP 26); *see also* H.O. Pörtner et al., Biodiversity and Climate Change: Workshop Report 17 (IPBES & IPCC, 2021).

709 Jeff Brady, *'Keep It in The Ground' Activists Optimistic Despite Oil Boom*, NPR (Mar. 16, 2018, 5:00 AM), https://www.npr.org/2018/03/16/589908135/keep-it-in-the-ground-activists-optimistic-despite-oil-boom [https://perma.cc/2NLU-E95A].

710 *See* Section I.A.

711 *See* Letter from 200 Leading Climate Scientists, *supra* note 632, at 1.

in recovering climate stability, carbon sequestration arguably ranks as the highest and best use of the forest trust in some regions.[712]

Increasingly, Oregon Westside forests draw attention as some of the most effective engines of natural carbon dioxide removal on Earth. As a team from OSU explained, the Pacific Northwest contains "some of the highest forest-carbon densities in the world."[713] Trees in the coastal forests on the west side can live 800 years or more, with biomass that can exceed that of tropical forests.[714] Moreover, they are more fire resistant than forests in other areas, which can add durability and longevity to the carbon storage.[715] In 2018, a team of scientists led by OSU professor Dr. Beverly Law modeled and mapped an array of management strategies to increase the total carbon biomass in Oregon forests. These included protection of existing forests from harvest, reforestation of cut-over forests, and extension of cutting rotations.[716] Of those strategies, as elaborated in a later study, the most effective in storing carbon is keeping existing forests intact.[717] As the authors found, a forest protection strategy offered the highest contribution to increased forest carbon (and decreased emissions), holding far more carbon storage than reforestation (which offered just one-third that of forest protection) or afforestation (which offered just one-tenth of protection).[718] Within a protection framework, the preservation of mature and old-growth trees is vital, because they continue to

712 *See* Law et al., *supra* note 78, at 11.

713 Harold Zald, *Carbon Stored in Pacific Northwest Forests Reflects Timber Harvest History*, LIFE AT OSU (2017), https://today.oregonstate.edu/archives/2016/apr/carbon-stored-pacific-northwest-forests-reflects-timber-harvest-history [https://perma.cc/WF64-QS57]; *see also*, Law et al., *supra* note 57, at 3663; Law et al., *supra* note 78, at 10 ("The PNW and Alaska stand out as having the largest mature and old forests with immense carbon stores and high biodiversity that meet the IPCC criteria of meriting protection to remove significant additional carbon from the atmosphere.").

714 Law et al., *supra* note 57, at 3663.

715 *See* Law et al., *supra* note 42, at 9 ("Moist carbon rich forests in the Pacific Coast Range and West Cascades ecoregions are projected to be the least vulnerable to either drought or fire in the future.").

716 Law et al., *supra* note 57, at 3664. The strategies outlined have several components that include forest protection, reforestation, and afforestation (establishing forest on land not previously or recently forested). *Id.*

717 *See* Law et al., *supra* note 78, at 3 ("[Because] many managed forests are harvested well before reaching maturity . . . forest carbon densities are much lower than their potential, and could accumulate much more carbon and avoid carbon emissions associated with harvest.").

718 *Id.*

accumulate large quantities of carbon.[719] As the authors explain, "While planting trees is desirable, that will contribute relatively little to carbon accumulation out of the atmosphere by 2100 compared to reducing harvest."[720]

Building on prior research, in 2021, a team led by Dr. Law offered a methodology for mapping strategic forest reserves that would protect forests of high carbon value in the Western United States.[721] In 2022, Dr. Law and coauthors published an analysis bringing the framework to a finer resolution that focusses on Oregon, noting "Oregon has less than 10% of its forestlands protected at the highest levels, yet its temperate forests are among those with the highest carbon densities in the world."[722] Protecting these forestlands achieves other major benefits, such as securing biodiversity and drinking water supplies.[723] The team mapped out high-priority forests that could provide the basis of an Oregon Strategic Reserve approach.[724]

Creation of forest reserves on public lands exemplifies the approach of achieving the highest use of the forest—for carbon storage—and maximizing the benefits to the public by securing drinking water protection, climate adaptation support, biodiversity enrichment, and recreational opportunity.[725] While traditional public forest management characteristically protected certain areas for public purposes and sacrificed other areas for logging,[726] the rudimentary management approach failed to maximize the public value of all trees standing. Moreover, the approach increasingly becomes obsolete and misguided against a reality eclipsed by the climate emergency because, quite simply, every carbon-storing mature tree counts as it continues to draw down CO_2 for its lifetime.[727] Harvest of these trees can no longer be thought of exclusively in terms of timber revenue but must instead be

719 *Id.* at 4 (also noting a study finding that trees larger than 53 cm DBH (21 inches) on six national forests in Oregon "comprised just 3% of the total stems, but held 43% of the aboveground carbon").

720 *Id.*

721 Law et al., *supra* note 42, at 1; *see also* Law et al., note 78.

722 Law et al., *supra* note 195, at 1–2.

723 *Id.* at 4–5; *see also* Law et al., *supra* note 78.

724 Law et al., *supra* note 195, at figs.3–4.

725 *Id.* at 11; Law et al., *supra* note 57, at 3663.

726 *See, e.g.*, sources cited *supra* note 6 and accompanying text (discussing Northwest Forest Plan); *see also* Law et al., *supra* note 78, at 3 (discussing management approach of Forest Service and BLM on federal lands).

727 *See* Law et al., *supra* note 78, at 4 (explaining that mature and old forests store more carbon than young forests and "continue to accumulate it over decades to centuries").

analyzed in terms of the full ecological cost—which includes lost carbon storage opportunity in addition to the pollution added to the atmosphere from harvest. Increasingly, new revenue streams for forest protection strategies emerge.[728] Public trustees of lands with revenue-generating objectives (such as school trust lands described in Section V.1.B) must search out such new economic opportunities to bring their income goals in line with society's ecological imperatives.

A plan for Oregon's 79,926-acre Elliott Forest,[729] located in the heart of the coastal range and holding massive Douglas Fir trees, serves as an example of a needed shift in focus on the part of government trustees. Described in Section II.C.2 above, the Elliott Forest was held in trust as part of the school trust lands endowment. After an intense battle over a proposed sale of the forest to private timber companies, the Oregon State Legislature in 2022 designated it for use as a "world-class research forest" managed by a new Elliott State Research Forest Authority in partnership with OSU.[730] OSU's proposed plan for the forest designates 65% of it as a reserve but left the remainder, including significant mature and old trees, in designated harvest areas.[731]

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728 Such financial incentives, however, should not be tied to offsets. *See* Law et al., *supra* note 42, at 7 (stating that forest carbon storage strategies "should not be considered as an offset that allows additional fossil fuels to be burned," pointing out, "This is a weakness of current 'net zero' accounting that should be modified by separating emissions reduction from carbon removal from the atmosphere[]"); *see also* discussion *infra* at Section VII.F.

729 The Elliott State Research Forest encompasses 32,375 hectares. *See* Law et al., *supra* note 195, at 6. That equates to 79,926 acres.

730 S.B. 1546 § 2(2), 81st Leg. Assemb. (Or. 2022).

731 *See* Oregon State University College of Forestry, Proposal, Elliott State Research Forest 3–4, https://www.forestry.oregonstate.edu/sites/default/files/041421_esrf_proposal.pdf [https://perma.cc/M2G8-ELKY] (explaining that 17% of the forest will be subject to "intensive" treatment, and 16% will be subject to "extensive" treatment). For a critical examination of the OSU plan as "timber-centric" and a result of unwarranted compromise, see Doug Pollock, *Compromising the Elliott State Forest*, Friends of OSU Old Growth pg. 4 (Nov. 16, 2020), https://friendsofosuoldgrowth.org/2020/11/16/compromising-the-elliott-state-forest/ [https://perma.cc/552G-ZR9C]; *see also* Testimony of Doug Pollock, Amendments to SB 1546 – Establishing an Elliott State Research Forest (ESRF), submitted to the Oregon State Legislature (Feb. 3, 2022), on file with author. As this Article was in the final stage of editing, OSU released an October 2023 draft Management Plan. *See* OSU College of Forestry, *Elliot State Research Forest - Forest Management Plan October 2023 Draft*, https://www.forestry.oregonstate.edu/sites/default/files/ESRF_FMP_Public%20Comment%20Draft_10.9.23_v2.pdf. That iteration continues to draw criticism for its clearcutting as well as other components. *See Comments of Doug Pollack, Friends of OSU Old Growth, on Elliott State Research Forest October 2023 draft Forest Management Plan* (Nov. 8, 2023), https://friendsofosuoldgrowth.org/wp-content/uploads/2023/11/Comments-for-OSU-FMP-for-the-Elliott-State-Research-Forest-final.pdf [https://perma.cc/FL79-DUEL]. Just a week after OSU's comment deadline on the October 2023 draft plan, as

Seemingly an act of political compromise, the substantial harvest raises serious questions of fiduciary duty. While many environmental advocates deemed the plan a victory for its protection across much of the acreage,[732] that view is shaped by the political frame from which it emerges. Compromise between competing environmental and economic interests is a win on the political level, but it is not appropriate when a public resource has already been "substantially impaired"—which is the case with Oregon's mature and old forests, along with the state's fisheries, wildlife, and waterways. At that point, the primary focus must be on recovering the assets and replenishing lost ecological wealth. Put differently, compromise is only justified if there are enough "chips on the table" to work with. When a resource is as depleted as the Oregon Forest Trust is, the latitude for compromise is often missing.

As other advocates for the forest, along with prominent forest scientists, point out, the OSU plan effectively sacrifices designated zones of ecologically rich mature and old forest to intense harvest.[733] The area falls within a zone designated in the recent Oregon Strategic Reserve paper as a "[h]igh priority area[] for carbon and biodiversity."[734] That team recommended increasing the protected reserves on Elliott State Research Forest to 75% of the area.[735] Applying a trust lens outside the political frame, the present management plan allows a loss of valuable carbon storage without due consideration by the trustee as to how to maximize the benefits of the entire forest. As the court in *Waiahole Ditch* declared, a trustee bears a clear responsibility to engage in "*planning and decision-making from a global, long-term perspective*."[736] Opponents of the plan also noted

this Article was going to print, the OSU President announced OSU's withdrawal as a partner in the Elliot State Research Forest management. *See* Letter of Jayathi Y. Murphy, OSU President, to State Land Board (Nov. 13, 2023), https://friendsofosuoldgrowth.org/wp-content/uploads/2023/11/ESRF_DSL-11.13.23-Murthys-Letter-Announcing-OSU-Withdrawal-from-Elliott.pdf [https://perma.cc/5BYL-V8KV].

732 Pollock, *supra* note 731 (describing reaction in environmental community).

733 *See* Josh Laughlin, *Innovation Must Drive Elliott State Research Forest*, REGISTER-GUARD (Jan. 15, 2020, 3:22 PM), https://www.registerguard.com/story/opinion/columns/2020/01/16/innovation-must-drive-elliott-state/1890432007/ [https://perma.cc/JMQ5-DXS2] (noting plenty of other opportunities in the Coast Range for OSU to study clear-cuts as part of its research program); *see also* Pollock, *supra* note 731, at 8.

734 Law et al., *supra* note 195, at 6 (arguing for establishment of protected forest reserves in Oregon to protect carbon and biodiversity along with other forest functions).

735 *Id.*

736 *See In re* Water Use Permit Applications, 9 P.3d 409, 455 (Haw. 2000) (emphasis added).

that the likely monetary return on harvest may be far less than long-term returns in emerging carbon markets, a factor not weighed in the OSU plan.[737]

On private industrial timberlands on the west side, the forest holds the very same carbon storage potential to society, but the trees are typically harvested at forty-year rotations to maximize their commodity value for private corporations. This poses a dilemma that the sovereign trustees must grapple with. Trustees may not simply carve out private forests from a program of carbon storage, for 76% of the forest biomass harvested is on private lands.[738] In other words, private timberlands form too much of the equation to be excised from a climate strategy. In their comparison of strategies to increase carbon storage across Oregon forestlands, Dr. Law's team found that increasing the rotation on private lands from forty to eighty years, when combined with reducing harvest by half on public lands in the state, "contribute[s] the most to increasing forest carbon and reducing emissions."[739] It is therefore vital that trustees envision ways to recruit private lands (whether by regulation, incentives, buyouts, or a combination) into the carbon drawdown project.

4. The Duty Against Privatizing Trust Resources and Managing or Regulating a Trust Asset for the Primary Benefit of a Private Party

At its core, the trust confers protection against privatizing the ecological endowment necessary to sustain future generations of citizens through time. Courts recognize that when trust assets are alienated (privatized), the trustee relinquishes control over them, and the public loses free access to them. Thus, a core fiduciary duty is to refrain from alienating the assets held in public trust except in very limited circumstances where doing so serves the public purposes of the trust and does not cause "substantial impairment" of remaining assets.[740] The rule not only applies to outright sales but also to leases of trust property, or other contracts that convey private rights. Thus, it applies to water rights and leases of submerged lands.[741] Where forestlands are held in public ownership (as is the case with national

737 *See* Testimony of Doug Pollock, Amendments to SB 1546 – Establishing an Elliott State Research Forest (ESRF), submitted to the Oregon State Legislature (Feb. 3, 2022), on file with author.

738 *See* Law et al., *supra* note 57, at 3663.

739 Law et al., *supra* note 78, at 3.

740 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 435 (1892).

741 *In re Water Use Permit Applications*, 9 P.3d at 450.

forests, BLM lands, and state lands), this duty against alienation constrains the sovereign trustees' discretion to allow timber sales.

Regrettably, as previous Parts explain, agencies managing public forests repeatedly violate this principle when they allow private operators to carry out clear-cuts and other intensive harvest practices that substantially impair not only the integral forest trust but also the corollary trust resources such as water, wildlife, and the atmosphere. Patterns of widespread forest damage persist because the trustees have not been held accountable to this duty. A public trust analysis should accompany every forest management program to determine whether the grant of rights to private operators will result in "substantial impairment" to trust resources. While the analysis required by the National Environmental Policy Act (NEPA) may generate helpful information, the analysis is merely procedural and does not contain the same substantive force as a fiduciary duty under the public trust.

Leading courts underscore a related fiduciary duty preventing the trustee from making a decision for the primary purpose of benefiting a private party.[742] The logic infusing this rule is clear. As the Supreme Court declared long ago in *Geer v. Connecticut*, the trust is "for the benefit of the people and not . . . for the benefit of private individuals as distinguished from the public good."[743] The beneficiary class of the trust is comprised of present and future generations of citizens—the public as it emerges through the ages. When government trustees make decisions affecting the trust for the primary benefit of a private party, rather than the public, they violate their duty of loyalty to the actual beneficiaries.[744]

Mediating that difficult interface between private and public interests, the duty of loyalty applies across the multitude of trustee decisions. One federal district court, for example, overturned the conveyance of a shoreline parcel along Lake Michigan to a private university (Loyola University, for purpose of campus expansion) on the basis of this factor, stating: "[T]he inescapable truth is that the lakebed property will be sacrificed to satisfy Loyola's private needs. Under the public trust doctrine, such a sacrifice cannot be tolerated."[745]

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742 *See* Lake Mich. Fed'n v. U.S. Army Corps of Engr's, 742 F. Supp. 441, 445 (N.D. Ill. 1990) ("[T]he public trust is violated when the primary purpose of a legislative grant is to benefit a private interest."). For analysis of this duty, see WOOD, *supra* note 22, at 167–69.

743 Geer v. Connecticut, 161 U.S. 519, 604 (1896).

744 Section Part V.B.1, *infra*, explores in more detail the duty of loyalty.

745 *Lake Michigan Fed'n*, 742 F. Supp. 441 at 445.

In a forest context, the Washington Supreme Court overturned a legislative action that released timber companies from long-term contracts on county trust lands to relieve the economic loss they would otherwise have incurred. The court said: "The conclusion is inescapable that the primary purpose and effect of this legislation was to benefit the timber industry and the state economy in general, at the expense of the trust beneficiaries. This divided loyalty constitutes a breach of trust."[746] And the Hawaii Supreme Court applied the principle to scrutinize water rights granted to private parties, as discussed further below.[747]

Application of the duty of loyalty requires a nuanced analysis. Clearly, the trust duty does not categorically preclude private use of a public trust resource. Many private uses benefit society as a whole in a variety of ways. But some private uses deplete the ecological wealth needed by society without justifiable counter gains. The vast statutory discretion enjoyed by agencies never forces the appropriate inquiry of whether the agency is acting for the public or for the private industry. Instead, discretion operates as the legal conduit through which the agency delivers public resources directly into corporate hands.[748] As Professor Oliver Houck once wrote of the U.S. Forest Service: "The code words fool no one involved: more 'discretion' means that industry gets to cut more timber."[749] Due to the political sway of some powerful private interests, there needs to be a check against the government's discretion to use public trust property to garner its own political gain.

In the context of public forest use, where timber sales benefit a timber company, the question is whether the benefit to the timber company was the primary motivating interest behind the decision to allow harvest. Few decisions are wholly for public or private benefit. The challenge is sorting through the circumstances to determine the primary motivation behind a decision. Of course, even when agencies act primarily to promote private interests, they do so in the shadows, because openly promoting only private interests would bring their abrogation of duty into full light. Accordingly, the Hawaii Supreme Court made clear that a trustee's decision to commit trust assets for private commercial uses warrants a "higher level of scrutiny," stating,

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746 Skamania Cnty. v. State, 685 P.2d 576, 582 (Wash. 1984).

747 *See In re* Water Use Permit Applications, 9 P.3d 409, 451 (Haw. 2000).

748 *See* WOOD, *supra* note 22, at 83 (exploring the "Politics of Discretion" and explaining how "discretion breeds dysfunction across environmental agencies").

749 Oliver A. Houck, *On the Law of Biodiversity and Ecosystem Management*, 81 MINN. L. REV. 869, 928 n.366 (1997).

"The burden ultimately lies with those seeking or approving such uses to justify them in light of the purposes protected by the trust."[750]

In the forest context, forest health or fire prevention is nearly always stated as a reason to justify harvest.[751] Depending on the circumstances, that reason may be fully borne out by science, or it may be a subterfuge for handing out public timber resources to an agency's political ally. Another common purported purpose is that harvest will benefit the local economy, provide jobs, and bring in tax revenue. As explained earlier, these generalized rationales are typically not deemed legitimate reasons for depleting public trust property.[752] A third reason often cited, particularly in the Oregon context, is that a timber supply is necessary to keep local mills operating. This rationale brushes close to the bar prohibiting decisions for the primary purpose of a private party. Local mill owners have reasonable economic concerns, and they often use local timber supplies. As a matter of economic policy, government may be justified in taking a panoply of actions (e.g., subsidies, tax breaks, government procurement contracts, and such) to aid individual mills. But general economic policy must not be confused with public trust decision-making. The former derives from the policy power to support the general welfare of society, while the latter operates to protect the property owned by the people, to be sustained in perpetuity. The trust requires decoupling general economic policy aims

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750 *In re Water Use Permit Applications*, 9 P.3d at 454.

751 *See* JAN G. LAITOS, SANDI B. ZELLMER, & MARY C. WOOD, NATURAL RESOURCES LAW 2D, 621 (West 2012) (pointing out the "frame-change" accomplished by the Bush II administration in justifying sweeping changes to forest management regulations through the "Healthy Forest Initiative": "[M]ight the purported goal of forest health operate as a screen for industry profit objectives?").

752 Generalized rationales for trust decisions are typically too ubiquitous to be of much analytical value. Every public decision could rest on these reasons. Moreover, public trust property must endure for future generations. If general economic conditions justified depleting the trust, then trustees would drain public property during economic downturns to benefit a present generation at the expense of future citizens—this approach flies in the face of the duty of loyalty to the full set of beneficiaries. For cases rejecting generalized rationales for decisions harming trust interests, see, for example, Slocum v. Belmar, 569 A.2d 312, 327 (N.J. Super. Ct. 1989) (striking down public beach admission fees funding (in lieu of taxes) municipal expenditures); Skamania Cnty. v. State, 685 P.2d 576, 581 (Wash. 1984) (stating that the duty of loyalty to trust beneficiaries trumps "direct, tangible benefits" to the state economy and forest product industry); Ervien v. United States, 251 U.S. 41, 47 (1919) (sale of trust assets to fund tourist advertisement violates duty of loyalty because use of funds allocated by the state Enabling Act were specifically enumerated for "purposes for which the lands were granted and the enumeration is necessarily exclusive of any other purpose"); Gladden Farms, Inc. v. State, 633 P.2d 325, 330 n.5 (Ariz. 1981) (stating that the duty of loyalty bars sale of trust lands even to relocate flood victims, "[h]owever worthwhile and desirable this sale may be for the humanitarian purposes for which it is made").

from trust decisions. If a harvest decision was made for the primary financial benefit of a mill operator or timber corporation, it violates the agency trustee's fiduciary of care—full stop. If, on the other hand, the decision was made to further a broader public purpose (apart from benefit to the mill), the analysis likely must examine other questions involving need for the supply and availability of alternative supplies. For example, former Governor John Kitzhaber has proposed that local Oregon timber supplies be accessed to provide materials needed for housing the homeless and people evicted by wildfire.[753] This justification, clearly tied to a compelling public need apart from private or dispersed economic benefit,[754] will warrant further scrutiny to weigh such public need against the ecological costs to the public from harvest. In sum, the public trust duty demands more of agencies than the standard categorical justifications for harvest. While those may float easily in the political sphere, they fail to meet the analytical rigor required of a trustee to make decisions for the primary benefit of the beneficiary class—and no other.

5. The Duty to Restore the Trust When Damaged and Recover Natural Resource Damages Against Third Parties

Trust law requires the trustee to restore lost wealth in the *res* resulting from a breach of trust or third-party damage.[755] This basic principle seeks to return the beneficiaries to their rightful position. The urgency of the climate crisis and other planetary threats compels a bureaucratic state shift from an approach that allows colossal ecological damage to one that catalyzes massive restoration efforts across all public trust resources, including forests, streambeds, waters, fish, and wildlife. With respect to forests, the recovery project must include replanting denuded areas with diverse species, de-roading, and restoring streambeds, among other measures. Unfortunately, full return on these restoration investments will take centuries.

Restoring a depleted or bankrupt ecological trust requires massive funds. In private law, trustees have an affirmative obligation to recoup

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753 *See* John Kitzhaber, *Wildfire, Forest Health and Housing*, JOHN KITZHABER BLOG, (Apr. 6, 2022), https://blog.johnkitzhaber.com/wildfire-forest-health-and-housing/ [https://perma.cc/7955-XCT7] (proposing to use forest materials to achieve an ambitious goal tied to solving the housing crisis afflicting Oregon).

754 *Id.*

755 For discussion of this duty, see WOOD, *supra* note 22, at 185–86 and cases cited therein. The restoration duty also applies to wealth lost as a result of uncontrollable causes, but this Article does not explore that scenario in depth, focusing instead on the trustee and third-party roles in causing damage.

monetary damages against third parties that harm or destroy trust assets.[756] This duty helps ensure that the beneficiaries will be made whole for loss or damage of their property. In fact, as the leading treatise of trust law states, trustees themselves are liable for damages if "[they] should have known of danger to the trust, could have protected the trust, but did not do so."[757] In the public trust context, the duty demands recovery of natural resource damages (NRDs), which are used to restore the damaged resource. NRD suits are common, for example, when an oil spill occurs in marine or inland waters, or mining waste contaminates a watershed; without question, the responsible companies will pay for cleanup and damages to natural resources.[758] An extensive set of statutory provisions provides for suits to recover damages from oil spills and other releases,[759] but common law also provides a basis where there is no statutory authority.[760] Increasingly, states and local governments are suing manufacturers of chemicals such as PCBs, MTBE, and PFAS chemicals under common law public nuisance and public trust theories for cleanup of water supplies, fish and wildlife, and soils.[761] The Oregon Attorney General brought a lawsuit against Monsanto Corporation for PCB pollution to the natural resources of the state, invoking the public trust responsibility to protect such resources;

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756 *Id.* at 185.

757 GEORGE T. BOGERT, TRUSTS § 95, at 391 (West 6th ed. 1987).

758 *See, e.g.*, U.S. AND FIVE GULF STATES REACH HISTORIC SETTLEMENT WITH BP TO RESOLVE CIVIL LAWSUIT OVER DEEPWATER HORIZON OIL SPILL, U.S. Dep't of Justice (Oct. 5, 2015).

759 *See* Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–9675, § 9607(f)(1)(2000); Oil Pollution Act of 1990, 33 U.S.C. §§ 2701–2761 (2000); 33 U.S.C. § 2706 (2000); Federal Water Pollution Control Act, 33 U.S.C. § 1321(f)(4).

760 *See* Md. Dep't of Nat. Res. v. Amerada Hess Corp., 350 F. Supp. 1060, 1067 (D. Md. 1972) (holding that the state had a right to maintain common-law action for pollution of waters based on the public trust doctrine in the absence of state legislation); State Dep't of Env't Prot. v. Jersey Cent. Power & Light Co., 336 A.2d 750, 758–59 (N.J. Super. Ct. App. Div. 1975) (finding a duty to seek damages for harm to natural resources held in public trust), *rev'd on other grounds*, 351 A.2d 337 (N.J. 1976); State v. City of Bowling Green, 313 N.E.2d 409, 411 (Ohio 1974) (noting public trustees' "obligation . . . to recoup the public's loss occasioned by . . . damage [to] such property"); Wash. Dep't of Fisheries v. Gillette, 621 P.2d 764, 767 (Wash. Ct. App. 1980) (noting right and "fiduciary obligation of any trustee to seek damages for injury to the object of its trust").

761 *See* Mary Christina Wood, *Atmospheric Recovery Litigation Around the World: Gaining Natural Resource Damages Against Carbon Majors to Fund a Sky Cleanup for Climate Restoration*, *in* HANDBOOK ON CLIMATE CHANGE LAW AND LOSS & DAMAGE 303–30 (Edward Elgar 2021) (examining NRD common law cases).

the suit ended in 2022 with a $700 million settlement to the state of Oregon to fund cleanup.[762]

Certainly, the vast watershed damage to drinking water supplies, navigable waters, and fisheries from industrial logging warrants NRD attention and analysis. The timber industry has reportedly gained $67 billion in value from logging Oregon forests, adjusted for inflation, since 1991,[763] yet has not paid for the damage it has caused to the state's resources. As noted earlier, the zone of consequential natural resource damage these corporations have inflicted may far exceed the immediate geographic scope of their actions. For example, the drinking water of numerous communities is stored, released, and filtered by Coast Range and Cascade Range forestlands, much of which is owned, razed, and chemical-sprayed by industrial timber corporations. The cost of restoring devastated community water supplies outside these private timberlands has fallen to local communities rather than to the companies responsible for the damage. Worsening the matter, tax favoritism toward the timber industry means that standard revenue streams to the state that could help with these basic community services have dwindled dramatically.[764]

A public trust claim (coupled with a public nuisance claim) may provide an avenue for recouping damages to an entire watershed. While common law NRD actions usually involve chemical pollution—and Oregon industrial forestry certainly holds this component, due to broadscale chemical spray practices[765]—one notable example of a

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762 *See* State v. Monsanto, No. 18CV00540, 2018 WL 8222423 (Or. Cir. Ct. Feb. 5, 2018); *see also* Conrad Wilson & Cassandra Profita, *Oregon Reaches Nearly $700M Settlement with Monsanto over PCB Contamination*, HUMBOLDT BAYKEEPER (Dec. 17, 2022), https://www.humboldtbaykeeper.org/news/latest/1642-oregon-reaches-nearly-700m-settlement-with-monsanto-over-pcb-contamination [https://perma.cc/PCF9-SRMS].

763 *See* Schick et al., *supra* note 63, at 5.

764 *Id.* at 5–6. According to the Department of Forestry, due to a phase-out of the severance tax previously charged to timber companies, Oregon has gained—from $67 billion of value garnered by corporations from logging since 1991—only $871 million, instead of $3 *billion* that would have been gained without the tax cut. "If Oregon taxed timber owners the same as its neighbors . . . it would generate tens of millions of dollars more for local governments." *Id.* at 6. Corporate timber ownership, as one individual interviewed commented, "is not stewardship . . . [t]his is exploitation." *Id.* at 22.

765 *See supra* Section V.B.4 (discussing chemical applications in the context of the duty of precaution). Notably, in recent actions by sovereigns to recover damages for chemical contamination of public resources (including water), courts have greatly eased the causation requirement that is a classic element of a tort action. Noting the practical impossibility of "fingerprinting" the chemicals found in soils and water back to their originating manufacturer, the courts allow a nearly causation-free approach in some cases. For

common law NRD action involves fish habitat loss. In *State v. Gillette*, a court awarded NRDs for the loss of a salmon fishery resulting when the property owner altered a stream and rebuilt its bank.[766] Anchoring the ruling in the state's sovereign ownership of the fish, the court recognized "the fiduciary obligation of any trustee to seek damages for injury to the object of its trust."[767] Likewise, Oregon state and county trustees bear the duty of exploring legal avenues for recouping the damage to trust resources from private logging operations.

B. Procedural Duties of Trustees

1. The Duty of Loyalty and Impartiality

Steadfast and unbending loyalty to the beneficiaries remains the essence of any trust.[768] As George T. Bogert explains in his leading treatise on trust law, self-interested trust management would be "highly dangerous" given the degree of control a trustee has over property.[769] Courts strictly enforce the duty of undivided loyalty so as to deter personal self-interest from influencing trust management decisions.[770] Accordingly, courts require trustees to avoid all conflicts of interest so as to eliminate even the possibility for any temptation to enter decisions concerning the trust. Thus, a court will invalidate a trust transaction tainted by a conflict of interest regardless of whether the trustee acted in good faith or whether the transaction was, or was not, actually detrimental to the beneficiaries.[771] This approach banishes not only self-interested conduct but also conduct motivated to enrich a third person.[772] As one commentator explained the judicial reasoning behind these rigorous rules:

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discussion, see Wood, *supra* note 761. *See also* Rhode Island v. Atlanta Richfield Co., 357 F. Supp. 3d 129, 137 (D. R.I. 2018) (allowing more flexible approach to causation to avoid creating an impossible burden of proof, noting, "When some volume of MTBE is found in the environment, chemical tests attempting to trace it back to its source always will be in vain . . . Turtles all the way up, as far as the state can tell[]").

766 *See* State v. Gillette, 621 P.2d 764, 816 (Wash. Ct. App. 1980).

767 *Id.* at 820; *see also* GOBLE ET AL., *supra* note 393, at 394. In the *Gillette* case, the landowner also violated a clear regulatory approval requirement before damaging the streambank. Oregon forest laws lack approval requirements to damage public drinking water sources and waterways, so the approval factor is not likely to be as relevant in the Oregon context.

768 *See* discussion in WOOD, *supra* note 22, at 188.

769 BOGERT, *supra* note 757, at 341–47.

770 Courts show an "unbending and inveterate" judicial tradition of enforcing these fiduciary standards. *Id.* at 189 (quoting Meinhard v. Salmon, 249 N.Y. 458, 464 (1928)).

771 WOOD, *supra* note 22, at 189; *see also* BOGERT, *supra* note 761, at 341–47.

772 *Id.*

> [H]uman nature will cause any person to favor his or her personal interests over the interests of another, and it is this assumption of disloyalty that gives rise to the strict prohibitions of trustee conflicts of interest . . . . [A]s the beneficiary is assumed to be on the losing end of any conflict with the fiduciary's personal interests, loyalty can be preserved only if the relationship is stripped of the possibility of such conflicts. The duty of loyalty is, therefore, not the duty to resist temptation but to eliminate temptation, as the former is assumed to be impossible. The trustee is at the pinnacle of fiduciary duty and is held to the highest standards. . . . [T]he trustee's duty of loyalty will be paramount and unforgiving, at least one hundred percent.[773]

The Supreme Court brought this expectation of loyalty into the public trust context when it declared in *Geer v. Connecticut*: "[T]he power . . . is to be exercised, like all other powers of government, as a trust for the benefit of the people, and not as a prerogative for the advantage of the government as distinct from the people."[774] As Professor John Dernbach explains in a probing analysis of fiduciary duties, the duty of undivided loyalty is appearing in public trust cases.[775] The Pennsylvania Supreme Court elaborated on the obligation in *Pennsylvania Environmental Defense Foundation v. Commonwealth*, stating:

> The duty of loyalty imposes an obligation to manage the corpus of the trust so as to accomplish the trust's purposes for the benefit of the trust's beneficiaries. . . . The duty of impartiality requires the trustee to manage the trust so as to give all of the beneficiaries due regard for their respective interests in light of the purposes of the trust.[776]

Two cases illustrate the application of this duty in the public trust context. In *Slocum v. Borough of Belmar*,[777] analyzed by Professor Dernbach, the court addressed whether the Borough of Belmar violated its duty of loyalty by charging admission fees for a beach held in public trust in order to pay for its general municipal expenditures. Holding that "[a] public trustee is endowed with the same duties and obligations as an ordinary trustee," including the duty of loyalty, the court explained:

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773 Karen E. Boxx, *Of Punctilios and Paybacks: The Duty of Loyalty Under the Uniform Trust Code*, 67 MO. L. REV. 279, 279–80 (2002) (emphasis added).

774 *See* Geer v. Connecticut, 161 U.S. 519, 529 (1896).

775 John C. Dernbach, *The Role of Trust Law Principles in Defining Public Trust Duties for Natural Resources*, 54 U. MICH. J.L. REFORM 77, 97–98 (2020) (discussing cases imposing duty of loyalty in public trust context).

776 Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911, 932 (Pa. 2017); *see also* Dernbach, *supra* note 775, at 97–98.

777 Slocum v. Belmar, 569 A.2d 312, 317 (N.J. Super. Ct. Law Div. 1989).

> [B]elmar breached its duty of loyalty to the public by increasing beach admissions fees, rather than real estate taxes, in order to raise the borough's general revenues. . . . It operated the beach area as though it were a commercial business enterprise for the sole benefit of its taxpayers. This conduct resulted in surplus beach fee revenues being used to subsidize other municipal expenditures for the exclusive benefit of the residents of Belmar, rather than being set aside [for beach expenses]. These actions place the interest of Belmar's residents before those of the beachgoers, in violation of the borough's duty under the public trust doctrine.[778]

The duty also gained attention in *Skamania County v. Washington*, where the Washington Supreme Court found a breach of trust in the forest context when the legislature acted to relieve timber companies of logging contracts that had turned unprofitable. As the court explained, the legislature had acted out of "divided loyalty" to the timber industry and the trust beneficiaries.[779] More recently, the same court reaffirmed the duty of "undivided loyalty to trust beneficiaries" in the context of school trust lands.[780]

While all government officers take an oath of office to uphold the public interest, the fiduciary duty of loyalty rises as an elevated duty incumbent on those officials managing public trust property. The duty of loyalty sets the trust apart from the political realm, where loyalty to private interests is routinely gained through campaign contributions, lobbying, and various favors. In a political climate that tolerates such inducements as everyday reality, the breach of loyalty combats an entrenched, plainly biased institutional culture that permeates all levels of decision-making. The trust principle aims to shield the public's invaluable natural assets from the self-interested propensity of government officials. Without an enforceable duty of loyalty, trustees will constantly succumb to the temptation to raid the public's ecological wealth they manage to serve their political allies.[781]

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778 *Id.*; *see also* Dernbach, *supra* note 775, at 97–98.

779 *See* Skamania Cnty. v. State, 685 P.2d 576, 582 (Wash. 1984) ("The conclusion is inescapable that the primary purpose and effect of this legislation was to benefit the timber industry and the state economy in general, at the expense of the trust beneficiaries. This divided loyalty constitutes a breach of trust."); *see also* Dernbach, *supra* note 779, at 97 (illuminating the duty of "undivided" loyalty in the public trust context).

780 Conservation Northwest v. Comm'r Pub. Lands 514 P.3d 174, 182 (Wash. 2022).

781 *See* WOOD, *supra* note 22, at 191. ("[W]hen legislators preside over natural resource decisions, they sit not merely as elected officials but as trustees of public property. In this capacity, they remain bound by the strict duty of loyalty toward the beneficiaries—namely, to present and future citizens, not special interests. This heightened standard of ethical behavior and loyalty finds justification in the fact that future generations hold legal property rights under the trust yet enjoy no political voting power in the legislative process.").

The strict duty of loyalty pertains to all public trustees, which encompasses any administrative or legislative body that acts in a capacity making decisions as to public trust property.[782] Thus it applies to legislators, the Governor, Secretary of State, Treasurer, county commissioners, agency officials in the Department of Forestry, Department of State Lands, DEQ, U.S. Forest Service, BLM, and multiple other officials at the federal, state, and local level in their engagement with natural resource issues. At its core, the duty requires government trustees to "eliminate temptation" and avoid conflicts of interest that may engender bias in their decision-making to favor parties outside the public beneficiary class.[783]

Such conflicts of interest can operate on an institutional or individual level. At the institutional level, an agency's budget process may create bias. It has long been problematic, for example, that Forest Service budgets are tied to timber receipts, creating endless internal pressure to "get the cut out" so that the agency operations can keep running.[784] Decoupling budget incentives from resource management decisions becomes essential to eliminate bias in a trustee's decision-making.[785]

On the individual level, campaign contributions put sovereign responsibility up "for sale." Legislators, presidents, governors, county commissioners, and other political leaders regularly accept campaign contributions from industries; in turn, those industry donors naturally expect favorable treatment from their decisions.[786] Evaluated against

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782 Pa. Env't Def. Found. v. Commonwealth, 161 A.3d 911, 934 n.23 (Pa. 2017) ("Trustee obligations are not vested exclusively in any single branch of Pennsylvania's government, and instead all agencies and entities of the Commonwealth government, both statewide and local, have a fiduciary duty to act toward the corpus with prudence, loyalty, and impartiality.").

783 *See* Boxx, *supra* note 773; *see also* BOGERT, *supra* note 757, at 341–47 (explaining that trust law "is principally desirous of procuring a result which will keep all trustees out of temptation").

784 *See* WOOD, *supra* note 22, at 89–91, 194 (discussing the politics of self-interest embedded within agencies such as the U.S. Forest Service).

785 *Id.* at 194 (discussing the then Interior Secretary Salazar's restructuring of the Minerals Management Service in the wake of the Deepwater Horizon catastrophe to eliminate internal agency revenue bias from tainting lease decisions).

786 *See* Davis, *supra* note 292. Davis interviewed retired legislator Betty Komp, who recounted a time when a physicians' lobbying group, announced to a convened group of legislators the group's agenda for the upcoming legislative session. As Komp recalls the meeting, "They would say, 'We would really like your support,' and then hand you a check . . . That's pretty blatant." *See also* Andy Kerr, *Oregon State Forests: Public Forests, Not County ATMs*, Andy Kerr's Public Lands Blog (Oct. 18, 2022), https://www.andykerr.net/kerr-public-lands-blog/2022/10/14/oregon-state-forests-public-forests-not-county

the trust duty, a lawmaker's acceptance of such campaign contributions amounts to a palpable breach of loyalty because it engenders obvious self-interest: if the official does not use their lawmaking position to offer paybacks to the donor, the money will dry up in the next campaign. The incentive for self-dealing—exactly the kind of temptation that the trust abhors—could hardly be more blatant. Popular culture understands this all too well. The problem is not that this corruption goes unrecognized, but that it has become institutionalized. Seemingly resigned to the status quo, citizens remain unaware of any other paradigm that would yield a higher standard of ethical behavior from their government.

To be clear, a trust frame does nothing to directly challenge the *source and flow* of contributions. The U.S. Supreme Court's 2010 decision in *Citizens United v. FEC* allows corporations to make massive donations to political campaigns.[787] Rather, the fiduciary duty of loyalty turns the spotlight to the lawmaker's acceptance of the contribution and their subsequent decision on matters that directly affect or carry out the donor's interest. If taken to its strictest limit, the duty of loyalty would prohibit acceptance of significant contributions from industries that stand to gain from a trustee's decision affecting public trust property, for the duty requires the trustee to eliminate all *temptation* to self-deal. Notably, this approach would not affect those campaign contributions by donors having no discernable interest in public trust assets (i.e., contributions from teachers unions that seek to affect education policy, and businesses that seek to influence minimum wage decisions, and so forth); it would most certainly affect the resource-extractive industries.[788] Short of that most exacting approach (restricting the acceptance of campaign donations to eliminate bias), the duty of loyalty would prohibit a legislator or decision-maker from voting or deciding on a particular resource issue after accepting significant campaign contributions from a party that had a tangible

-atms [https://perma.cc/MZ8P-GEGY] (discussing campaign contributions on local county level, stating that "many county commissioners act as pawns of Big Timber. Historically in Oregon, there has been no daylight between the interests of Big Timber and TACs [timber addicted counties]. A contributing factor is that Big Timber has the money to play kingmaker (or kingkiller) in local county elections.").

787 Citizens United v. FEC, 558 U.S. 310 (2010); *see* WOOD, *supra* note 22, at 191 (observing that the decision "surely pounds another nail in the coffin of democracy").

788 This is discussed in more detail in WOOD, *supra* note 22, at 191.

stake in the outcome of that vote or decision.[789] Either approach—restricting acceptance of campaign donations or restricting biased decision-making—would frontally challenge and delegitimize precisely the political behavior that now regularly sabotages the public's vested property interests in trust assets.[790]

Attention to the duty of loyalty becomes imperative for Oregon forest reform. In a probing investigative report, *Polluted by Money*, reporter Rob Davis shows that the state of Oregon has among the laxest restrictions on campaign financing in the nation.[791] As he writes, "The failure to limit campaign donations has turned Oregon into one of the biggest money states in American politics . . . . Corporate interests donate more money per resident in Oregon than in any other state."[792] An investigative report by High Country News revealed that, between 2010 and 2014, the timber industry contributed $4.4 million to state campaigns in Oregon, amounting to "two and a half times more than the oil and gas industry, and 25 times more than the dairy industry."[793] When elected officials accept contributions from the timber industry, they open themselves to inferences that they cast their vote to benefit their industry donor rather than to protect the public's beneficial interest in trust property. There is ample room for forest advocates to connect the dots between campaign contributions and resulting decisions. Rob Davis reports in his exposé, "All that giving worked.

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789 While beyond the scope of this Article, it would be instructive to conduct a retrospective study pairing particular legislators' votes on forestry bills with the contributions they had received from the timber industry in the prior five years. Because contributions are well documented, citizens are equipped to invoke the duty of loyalty in the future when forestry bills are proposed. Where a legislator accepted tainted contributions during a relevant time period, citizens may make a formal demand, as beneficiaries of the trust, for recusal of the legislator from an upcoming vote.

790 This duty would logically likewise prohibit legislative "vote trading" on environmental matters. Legislators often cast a particular vote on one issue in order to gain a vote from a colleague on a completely unrelated issue. This pervasive vote trading proves poisonous for public policy making because it causes legislators to cast their votes in ways motivated by reasons quite apart from the merits of the proposal at hand. As a *per se* matter, a legislator who trades a vote on a natural resource issue in order to influence the outcome of a wholly unrelated issue does not make a decision on behalf of the beneficiaries' best interest in trust property and thereby violates the duty of loyalty owed to the public.

791 *See generally* Rob Davis, *Polluted by Money: Part Four*, OREGONIAN (Mar. 15, 2019), https://projects.oregonlive.com/polluted-by-money/part-4 [https://perma.cc/FZY6-2UVM].

792 *Id.*

793 *See* Clarren, *supra* note 83.

Oregon now trails its West Coast neighbors on a long list of environmental protections."[794]

An example raising the inference of bias comes from legislative proposals put forth by conservationists to limit pesticide spraying, prevent steep-slope logging, and prohibit conflicts of interest for State Board of Forestry members. All three proposed measures were summarily rejected from appearing on the ballot by the then-Secretary of State Bev Clarno.[795] Her rejection was noted for its "unprecedented" nature and unusual legal grounds.[796] Clarno had received $36,000 from timber companies, and her deputy, former state representative Richard Vial, had accepted $19,000 from timber interests.[797] Circumstances of this nature create an appearance of bias that provides fertile ground for exploring the fiduciary duty of loyalty. Under the strict approach to the duty of loyalty taken by courts in the private trust realm, the acceptance of such donations would breach the fiduciary duty, which is "not the duty to resist temptation but to *eliminate temptation*, as the former is assumed to be impossible."[798]

The duty of loyalty thus demands an altogether new approach to those campaign contributions that risk injecting self-interested bias into forest policy. It is unlikely that the legislature or other officials will initiate reform—as the system benefits them personally—but a court could enforce this duty in the public trust context by vacating and remanding decisions that flow from tainted contexts. The most streamlined avenue for advocates to establish this duty in Oregon may be in the context of State Land Board management of timberlands. In this context, courts acknowledge a strict fiduciary duty of loyalty,

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794 *See* Davis, *supra* note 791; *see also*, Davis, *supra* note 292 ("Oregon's failure to regulate campaign cash has made it one of the biggest money states in American politics. The flood of money created an easy regulatory climate where industry gets what it wants, again and again.").

795 Rob Davis, *Lawsuit Filed over Secretary of State's Unprecedented Rejection of Oregon Forest Ballot Measures*, OREGONIAN (Oct. 14, 2019, 2:42 PM), https://www.oregonlive.com/environment/2019/10/lawsuit-filed-over-secretary-of-states-unprecedented-rejection-of-oregon-forest-ballot-measures.html [https://perma.cc/MMM2-S78M]. For additional reporting, see Dirk VanderHart, *Oregon Secretary of State Properly Rejected Ballot Measures, Judge Rules*, OR. PUB. BROAD. (Nov. 27, 2019, 2:15 PM), https://www.opb.org/news/article/oregon-secretary-state-ballot-measure-rejected-ruling/ [https://perma.cc/GEA7-VJRF]; Rob Davis, *Secretary of State's Attorney Billing Taxpayers $690 an Hour in Forest Initiatives Lawsuit*, OREGONIAN (Nov. 21, 2019, 5:45 PM), https://www.oregonlive.com/politics/2019/11/secretary-of-states-attorney-billing-taxpayers-690-an-hour-in-forest-initiatives-lawsuit.html [https://perma.cc/W9SJ-DB32].

796 Davis, *supra* note 795.

797 *Id.*

798 *See* Boxx, *supra* note 773, at 280.

viewing the trust as a financial trust with a strong analog to privately managed trusts, where the duty of loyalty is strictly enforced.

An illustrative example of this avenue emerged from the decision faced by the State Land Board in 2015–2017 on whether to sell the Elliott Forest, which was part of the state school lands endowment. The Board is composed of three elected state officials: the Governor, the Secretary of State, and the Treasurer. Though the Elliot Forest remains a crown jewel of the state's forest trust, in August 2015 the Board voted unanimously to sell the entire forest for $220.8 million to a private timber company poised to cut the area for profit.[799] Bids were due by November 15, 2016, and Lone Rock Timber Management Company (partnered with the Cow Creek Band of Umpqua Tribe of Indians) was the sole bidder.[800] In a December 2016 meeting, with public protestors outside, the Board heard testimony and delayed its decision on the sale.[801] On February 14, 2017, the Board voted 2-1 to sell the Elliot State Forest to Lone Rock (in partnership with the Cow Creek Band of Umpqua Tribe). That decision was not finalized however, and in May 2017, the Board reversed the decision, ultimately leading to designation of the Elliott State Research Forest, with a new management authority (partnering with OSU).[802] What makes the saga deeply problematic for the duty of loyalty is that, as reported by Rob Davis, all three members of the Board received significant campaign contributions from Lone Rock or the Cow Creek Band of Umpqua Tribe—the entities that sought to purchase the forest.[803] Ultimately, the public prevailed in

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799 *See* Tracy Loew, *Roseburg Company Is Sole Bidder for Elliott State Forest*, STATESMAN J. (Nov. 16, 2016, 5:20 PM), https://www.statesmanjournal.com/story/news/2016/11/16/roseburg-company-sole-bidder-elliott-state-forest/93933050/ [https://perma.cc/3BHH-7YZR].

800 Loew, *supra* note 799.

801 *See* Molly J. Smith, *State Land Board Delays Decision on Elliot State Forest Sale*, STATESMAN J. (Dec. 13, 2016), https://www.statesmanjournal.com/picture-gallery/blogs/2016/12/13/state-lands-board-delays-decision-on-elliott-state-forest-sale/95396986/ [https://perma.cc/756Q-L39R].

802 *See* Urness, *supra* note 206; Loew, *supra* note 799 (explaining timeframe for process); Arnold, *supra* note 207.

803 Rob Davis, *Oregon Takes Big Step Toward Privatizing Elliot State Forest*, OREGONLIVE (Feb. 14, 2017), https://www.oregonlive.com/environment/2017/02/oregon_takes_big_step_toward_p.html [https://perma.cc/MA5F-93U8] ("All three land board members received campaign contributions from the group bidding on the forest. Richardson's election campaign received $11,000 from Lone Rock and a $10,000 donation in December, after he won, from the Cow Creek Band of Umpqua Tribe of Indians, a partner in the consortium that would buy it. Read got $3,000 from Lone Rock and its CEO. Brown has gotten $5,000 from Lone Rock and $60,000 from the Cow

removing the Elliott from a market sale, but had the Board decided to sell off the public trust property to a private timber company, the controversy would have presented a compelling case to test a claimed violation of the duty of loyalty.

Moving forward in managing the newly established Elliott State Research Forest, great care must be taken to insulate the Elliott State Research Forest Authority and OSU (which will take a significant role in management)[804] from bias and all conflicts of interest. A new board of directors, appointed by the State Land Board,[805] will direct the Authority in managing this valuable public property. The board members, which statutorily include the Dean of the College of Forestry at OSU, will step into a formal position of trustee of public property, bound by all attendant duties, including the duty of loyalty. That core duty will be impermissibly compromised if the members have a financial stake, direct or indirect, in the harvest of the Elliott. For example, if harvest revenue streams from the forest inured to the benefit of any board member or OSU, decisions would be facially infected with bias and should be invalidated by a court. Prior to the board's selection, advocates for protecting the Elliott drew attention to this prospect.[806]

2. The Duty to Adequately Supervise Agents and Monitor Trust Property

Another fiduciary duty requires the trustee to monitor the trust property and supervise agents or third parties that deal with the

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Creek Band."); *see also* Davis, *supra* note 292 ("Oregon has betrayed its environmental legacy. [The State Land Board] almost sold an 82,500-acre [Elliot State Forest] full of old growth trees to a logging outfit that donated $37,000 to key decision makers including Gov. Kate Brown."). Campaign finance records can be searched through the Secretary of State's "ORESTAR" database. OR. SEC'Y OF STATE, *Campaign Finance and Disclosures*, https://sos.oregon.gov/elections/Pages/orestar.aspx [https://perma.cc/HW9N-H7ZJ] (click on "Search for Campaign Finance Information" or "Historic Campaign Finance Reports").

804 *See supra* Section II.C.2; *see also* Law et al., *supra* note 78, at 3 (describing management).

805 *See* S.B. 1546 § 4(2)–(3), 81st Leg. Assemb., Reg. Sess. (Or. 2022).

806 *See* Doug Pollock, *OSU Update – Elliot Update*, FRIENDS OF OSU OLD GROWTH (Oct. 21, 2020), https://friendsofosuoldgrowth.org/2020/10/21/osu-elliott-update/ [https://perma.cc/P86G-TAGQ]. The blog brings up, for example, the conflict of interest that would occur if a company positioned to gain a logging contract to cut the Elliot State Research Forest were also a donor to the OSU College of Forestry. In the capacity of trustee of public property, the person filling the OSU role on the Elliot board of directors must take affirmative precautions to eliminate this type of conflict, or if that is not possible, the legislature should reconfigure the membership to enforce the duty of loyalty.

property.[807] Often a federal or state agency will contract with third parties for use of public trust property, or they will regulate activities of a third party that could affect trust resources. In the Oregon forest context, for example, private timber contractors will gain rights to harvest or conduct other management activities on federal or state public trust lands; these private contractors must be monitored by the U.S. Forest Service, BLM, State Department of Forestry, or Oregon Department of State Lands, depending on the context. Corporations also spray toxic chemicals across their privately owned forestlands, with the possibility of those chemicals ending up in public waterways;[808] the Oregon Department of Forestry and Oregon Department of Agriculture both play roles in overseeing these spray events and monitoring impacts to water trust assets.[809]

A leading public trust case exploring this duty of supervision is *Ching v. Case*, decided by the Hawaii Supreme Court in 2019.[810] Highlighted in Professor Dernbach's article on fiduciary duties, that case involved a sixty-five-year lease of Hawaii public lands by the State Department of Land and Natural Resources to the U.S. Department of Defense for military purposes.[811] While the lease contained provisions requiring the lessee to protect the land and prevent contamination, the state failed to inspect the property adequately to ensure the provisions were being carried out.[812] The plaintiffs, who were native Hawaiians and beneficiaries to the ceded trust lands, sued the state for failing to protect the public trust property and prevailed at the trial court. Affirming the decision, the Hawaii Supreme Court held that "an essential component of the State's duty to protect and preserve trust

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807 *See* Dernbach, *supra* note 775, at 93.

808 *See* Souder & Behan, *supra* note 603, at 291 (reporting that chemicals are "commonly detected in surface waters," but at lower concentrations that avoid accurate measurement, and also explaining that compared to other pesticides/herbicides, those used in the forest sector are less toxic and don't accumulate, but noting: "A caveat here, again, is that the impact of forest chemicals on downstream raw source water supplies will depend on the size of the contributing watershed, the proportion annually subject to chemical applications, and other land uses in the basin," and recommending "more rigorous monitoring and reporting").

809 *See Forest Practices Act*, OREGON.gov, https://www.oregon.gov/odf/working/pages/fpa.aspx [https://perma.cc/97Q3-NZM3] (explaining that the Oregon Department of Forestry works with timber companies and landowners to oversee harvesting operations to ensure FPA compliance, while the Oregon Department of Agriculture oversees the licensing, application, and labeling of pesticides).

810 Ching v. Case, 449 P.3d 1146, 1146 (Haw. 2019). For a discussion of *Ching v. Case*, see Dernbach, *supra* note 775, at 94–95.

811 *Ching*, 449 P.3d at 1150.

812 *Id.* at 1152–53.

land is an obligation to reasonably monitor a third party's use of the property."[813] The court made clear that "this duty exists independent of whether the third party has in fact violated the terms of any agreement governing its use of the land."[814] The state had failed in its duty by performing only three limited inspections over the course of decades, and the accumulated damage to public resources was significant by the time the case was brought.[815] Underscoring the duty to monitor, the court stated, "Reasonable monitoring ensures that a trustee fulfills the mandate of 'elementary trust law' that trust property not be permitted to 'fall into ruin on [the trustee's] watch.'"[816] It explained, "To hold otherwise would permit the State to ignore the risk of impending damage to the land, leaving trust beneficiaries powerless to prevent irreparable harm before it occurs."[817]

As the wealth in the trust diminishes due to the trustee's failures or other causes, the resulting scarcity puts a premium on all remaining ecological wealth, requiring ever more intense and rigorous trustee supervision of potentially harmful actions. In the Oregon forest context, cutting of old growth and mature trees carries a climate cost that was not previously recognized; thus, the duty to supervise logging contracts for these areas requires precise trustee scrutiny down to the last big tree. Similarly, because pure water sources will become ever rarer in a heating world, the state's duty to monitor chemical spraying across private lands requires enhanced vigilance to ensure chemicals do not contaminate public water supplies. While the toxic nature of such chemicals also triggers another duty—the precautionary approach, described below—the supervision and monitoring duty remains crucial so as not to "leav[e] trust beneficiaries powerless to prevent irreparable harm before it occurs."[818]

Investigative reports show a severe mismatch between the state's monitoring activities and the potential harm that occurs through spray. Citizens have long complained of the lax oversight and enforcement on the part of state officials charged with monitoring aerial spraying.[819] A

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813 *Id.* at 1150.

814 *Id.*

815 *Id.* at 1161, 1178.

816 *Id.* at 1168 (quoting United States v. White Mt. Apache Tribe, 537 U.S. 465, 475 (2003)).

817 *Id.* at 1150.

818 *Id.*

819 *See* Clarren, *supra* note 83 (reporting on state's failure to monitor chemical spraying); Liam Moriarty, *Industry Gets Behind Oregon Aerial Pesticide Spraying Bill; Advocates*

High Country News investigative report in 2014 revealed that there were only nine field investigators for the Oregon Department of Agriculture to cover the entire state of Oregon; thus, the agency monitored applications "only if asked."[820] The story also highlighted complaints of flawed and delayed investigations. An after-the-fact monitoring approach is by definition inadequate as it leaves trust beneficiaries "powerless to prevent irreparable harm before it occurs."[821] Fulfillment of this trust duty requires active monitoring at the time the potentially harmful activity occurs, or, logically, a prohibition on the activity until the state is equipped to do such timely monitoring. Annually, private timber operators carry out over 7,400 chemical applications across roughly one million acres of forestlands (most being herbicide applications to harvested units).[822] As the OSU *Trees to Tap* study found, "There are substantial knowledge gaps regarding the exact timing, locations, areas, amounts and formulations of forestry pesticides applied and also the effectiveness of BMPs [best management practices] for their use. These knowledge gaps can be at least partially addressed via more rigorous monitoring and reporting."[823]

3. The Duty of Reasonable Skill and Prudence

Trust law further imposes standards of basic competence in asset management. As one court summarized, trustees must "act in good faith and employ such vigilance, sagacity, diligence and prudence" as people would in managing their own affairs.[824] If the trustee has greater skill than an ordinary person, trust law obligates the trustee to use that

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Disappointed, JEFFERSON PUB. RADIO (June 18, 2015), https://www.ijpr.org/environment-energy-and-transportation/2015-06-18/industry-gets-behind-oregon-aerial-pesticide-spraying-bill-advocates-disappointed [https://perma.cc/KTC2-GMXR] ("A 2014 investigation by the *Oregonian* newspaper found state officials had a long history of minimizing pesticide spray complaints, failing to follow up on reports of exposure to the chemicals and botching subsequent investigations. The Department of Agriculture disputes those findings.").

820 Clarren, *supra* note 83 (quoting Sunny Jones, an ODA pesticide investigator: "As an investigator, I'm typically following up on complaints . . . We're not Big Brother. A lot of use goes on that we don't know about.").

821 *Ching*, 449 P.3d at 1150.

822 Souder & Behan, *supra* note 603, at 290 (analyzing Department of Forestry FERNS data).

823 *Id.* at 291.

824 Costello v. Costello, 103 N.E. 148, 152 (N.Y. 1913); *see also* Skamania Cnty. v. State, 685 P.2d 576, 582–83 (Wash. 1984) (discussing the duty of prudence in public trust context). For discussion, see WOOD, *supra* note 22, at 199.

skill when managing the trust.[825] As public trustees, these duties apply to federal and state environmental and forest management agencies, most of which deploy a high level of expertise through their scientific and technical staff.[826]

Environmental statutes reflect aspects of this fiduciary duty. The ESA, for example, requires application of "best scientific and commercial data available" in agency decisions made under section 7,[827] and the Forest Service must engage in "adaptive management" that requires the agency to monitor its management for outdated assumptions and revise accordingly.[828] Nevertheless, agencies may ignore their duty of reasonable skill and diligence, in two ways. First, some agencies regularly fail to develop, update, or use the information they need to manage public trust assets prudently. At the federal level, while NEPA requires federal agencies to explore the effects of, and alternatives to, proposed actions, all too often, agencies use NEPA's process to provide a post hoc rationale for decisions already made; moreover, they may not update their programs in light of new information.[829] There is no NEPA equivalent in Oregon, so Oregon agencies are under no statutory obligation to fully explore impacts of their decisions (including cumulative impacts on private and public lands over time) or develop alternatives to their proposed actions. Second, some agencies will suppress or distort existing information needed to properly manage trust assets—as the DEQ did when it failed to publish its draft resource guide showing the threat to drinking water supplies from logging (as described above).[830]

The duty to use reasonable skill reaches well beyond statutory requirements and logically includes (1) the duty to generate and use science that is responsive to rapidly and radically changing

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825 *See* RESTATEMENT (THIRD) OF TRUSTS: DUTY OF PRUDENCE § 77(2), (3) (2007); GEORGE T. BOGERT, TRUSTS § 93, at 334 (West 6th ed. 1987); *see also* WOOD, *supra* note 22, at 199.

826 Dernbach, *supra* note 775, at 95–97 (discussing duty of prudent management in public trust context).

827 Endangered Species Act, 16 U.S.C. § 1536.

828 36 C.F.R. § 220.3 (2008) (defining Adaptive Management as "a system of management practices based on clearly identified intended outcomes and monitoring to determine if management actions are meeting those outcomes; and, if not, to facilitate management changes that will best ensure that those outcomes are met or re-evaluated. Adaptive management stems from the recognition that knowledge about natural resource systems is sometimes uncertain").

829 *See* WOOD, *supra* note 22, at 117–19; Norton v. S. Utah Wilderness All., 542 U.S. 55 (2004) (limiting duty to update analysis in light of new information).

830 *See* Schick, *supra* note 605 and accompanying text.

conditions[831] and (2) the duty to shift past management approaches that are now eclipsed by a new climate reality. Known Oregon climate trends include increased wildfire, decreased snowpack, hotter temperatures, wetter winter storms, and rising sea levels.[832] Many assumptions that drove forest management decisions a decade ago may be obsolete today.

While the duty to use reasonable skill transcends all aspects of forest management, the discussion here illustrates the duty by focusing on the federal policy context of wildfire reduction, an area that has swung between extremes in recent years and now focusses on thinning as a primary strategy. The historic policy of the Forest Service centered on fire suppression, an approach that caused a buildup of fuels in the forest, aggravating the risk of extreme fire.[833] The next shift occurred as part of an emphasis on forest "health."[834] The Healthy Forest Restoration Act, passed in 2003, streamlined procedures for "authorized hazardous fuel reduction projects" on both national forests and BLM's forestlands.[835] Though the statute was enacted purportedly to protect national forests from catastrophic wildfire, it opened the door to significant logging in the name of fire risk reduction.[836] Years later, following a devastating spate of catastrophic California fires, President Trump declared an absurd ambition for "raking" the forests.[837] In 2021, President Biden announced a ten-year, multibillion dollar plan to reduce fire on fifty million acres of forestland (federal, state, tribal, and private ownerships) in targeted "firesheds" that border vulnerable communities.[838] The goal is to make forestlands more resilient and fire

831 *See* Meyer, *supra* note 55, at 216 (arguing that public trust duty imposed on U.S. Forest Service includes duty to use best available science).

832 Bradley W. Parks, *Climate Change in Oregon by the Numbers, from 0.1 to 200*, OR. PUB. BROAD. (Jan. 12, 2021, 6:00 AM), https://www.opb.org/article/2021/01/12/climate-change-oregon-effects/ [https://perma.cc/7TGD-YWBC].

833 *See* JAN G. LAITOS ET AL., NATURAL RESOURCES LAW 662 (2d ed. 2006).

834 *See id.*

835 *See id.* (citing HFRA, 16 U.S.C. § 6501 et. Seq.).

836 *See id.* at 662–64. Congress appropriated $760 million per fiscal year for projects under HFRA and left the agencies with discretion as to where to locate the projects. Moreover, it narrowed the NEPA procedures applicable to HFRA projects.

837 Selk, *supra* note 373.

838 Alyssa Lukpat, *Biden Administration Announces Plan to Spend Billions to Prevent Wildfires*, N.Y. TIMES (Jan. 19, 2022), https://www.nytimes.com/2022/01/19/climate/biden-administration-wildfire-plan.html [https://perma.cc/NT5U-AX2V] (discussing Biden's plan to treat, over a decade, thirty million acres of federal national forest land and twenty million acres of other federal, state, tribal and private forestland); U.S. FOREST SERV., FS-1187A, CONFRONTING WILDFIRE CRISIS: A STRATEGY FOR PROTECTING COMMUNITIES

adaptive but involves thinning (including mature trees) as a primary strategy, in addition to prescribed fire.[839] These extreme past shifts in strategy notwithstanding, any future policy must be shaped by the duty to use reasonable skill, which requires a probing examination of thinning—the core of the Biden approach.

Thinning surely has a legitimate role in fire prevention on some fire-prone landscapes. But the prospect of a huge federal push with funding to thin the forests also raises an obvious concern that forest health and fire prevention will be used to camouflage an entrenched agency management bias toward managing for increased timber revenues. In other words, the agencies may use fire prevention as a false flag for an aggressive program of revenue-based logging to benefit private timber companies. As scientists pointed out in a 2020 letter to Congress, "Troublingly, to make thinning operations economically attractive to logging companies, commercial logging of larger, more fire-resistant trees often occurs across large areas."[840]

Beyond that, two core concerns emerge from the thinning approach. One is that thinning may not achieve (or be the best way to achieve) fire prevention on some landscapes. Recent science casts enough doubt on the strategy to warrant robust examination. Since a trustee has the duty to employ best science (as part of its duty to use skill and diligence in making decisions), failure to account for this science would breach its fiduciary duty.[841] A second concern is that thinning for fire

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AND IMPROVING RESILIENCE IN AMERICA'S FORESTS 4 (Jan. 2022). The Biden fire plan is discussed in more detail in *supra* Section VI.A.1.

839 *See* Kristina J. Bartowitz et al., *Forest Carbon Emission Sources Are Not Equal: Putting Fire, Harvest, and Fossil Fuel Emissions in Context*, 5 FRONTIERS FORESTS & CLIMATE CHANGE 2 (2022) ("Increases in climate change-driven wildfire events have led to proposals to increase extractive forest harvest (i.e., [including] the removal of large, mature trees . . .) in areas at high risk of wildfire to decrease fire risk." (citations omitted)). In 2021, Congress passed the Infrastructure Investment and Jobs Act, which allocated $500 million to an ambitious thinning program on federal lands to prevent fire. Infrastructure Investment and Jobs Act, Pub. L. No. 117-58 (codified at 23 U.S.C. § 101) (2021). While the language calls for "harvesting in an ecologically appropriate manner that maximizes the retention of large trees, as appropriate for the forest type, to the extent that the trees promote fire-resilient stands," it remains unclear to what extent the retained agency discretion will favor old growth harvest. *Id.* § 40803(c)(11)(A)(i); *see also* Exec. Order No. B-52-18 (Cal. 2018) (calling for accelerating pace of forest thinning and other treatments to prevent wildfire).

840 Letter from 200 Leading Climate Scientists, *supra* note 632, at 2.

841 *See* Meyer, *supra* note 55, at 216 (exploring fire prevention thinning projects on U.S. forestlands and concluding that the public trust should give rise to "a judicially enforceable standard to ensure the agency is acting as a responsible trustee of our resources when determining what projects to undertake . . . The agency would not be permitted to undertake a logging project if it could not support its decision with verifiable science[]").

prevention fails to account for other ecological impacts to the trust, perhaps compromising vital forest functions of carbon removal, watershed protection, and biodiversity. An agency trustee that fails to account for such ecological impacts violates the duty of prudent management. The discussion below briefly summarizes recent science elaborating these points.

a. Thinning as a Fire Prevention Strategy

Without question, thinning holds a strong appeal with Western communities traumatized by fire. It is *doing something*. Industry representatives persistently argue for increased logging to reduce wildland fire.[842] But leading scientists criticize the approach, both because it is ineffective in some circumstances and because (as discussed in Section V.B.3.b below) it may exacerbate the climate crisis and damage key watersheds and biodiversity. While some studies show the effectiveness of thinning to prevent fire,[843] the context remains very site specific, and the duty of prudence requires trustees to not only apply the most current science but also apply it in a refined rather than categorical manner.

To be effective in preventing fire, a thinned area must overlap the area of fire spread. Due to the vast acreages of forestland, there is often no proximity between an area thinned and the ignited fire zone. The 2020 letter from scientists to Congress points out "the extremely low probability (less than 1%) of thinned sites encountering a fire."[844] Moreover, to make a thinning operation commercially viable, the larger

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842 Letter from 200 Leading Climate Scientists, *supra* note 632, at 2 (describing industry position).

843 *See* James D. Johnston et al., *Mechanical Thinning Without Prescribed Fire Moderates Wildfire Behavior in an Eastern Oregon, USA Ponderosa Pine Forest*, 501 FOREST ECOLOGY & MGMT. 119674 (2021); *see also* Steve Lundeberg, *OSU Study: Thinning Moderates Fire Behavior Even Without Prescribed Burns – For a While*, OR. STATE UNIV. (Sept. 26, 2021), https://today.oregonstate.edu/news/osu-study-thinning-moderates-forest-fire-behavior-even-without-prescribed-burns-%E2%80%93-while [https://perma.cc/ZLQ8-8DKG]. The OSU team looked at thinning of trees less than fifty-three centimeters in diameter at breast height. Other studies also suggest the effectiveness, "under very limited conditions," of small-tree thinning to reduce fire intensity when coupled with burning of slash debris. *See* Letter from 200 Leading Climate Scientists, *supra* note 632, at 2 (summarizing studies from Perry et al., *Forest Structure and Fire Susceptibility in Volcanic Landscapes of the Eastern High Cascades, Oregon*, CONSERVATION BIOLOGY 18 (2004); Strom and Fule, *Pre-wildfire Fuel Treatments Affect Long-Term Ponderosa Pine Forest Dynamics*, INT'L J. OF WILDLAND FIRE 6 (2007)).

844 Letter from 200 Leading Climate Scientists, *supra* note 632, at 2 (citing Tania Schoennagel et al., *Adapt to More Wildfires in Western North American Forests as Climate Changes*, 114 PNAS 4582 (2017)).

trees are selected for harvest, yet ironically those are the more fire-resistant trees.[845] One study found that more protected forestlands exhibited lower fire severity despite having the highest overall levels of biomass and fuel loading, casting doubt on the traditional view that forests with less logging will burn more intensely.[846] Another more recent study broadly examining 154 California fires from 1985 to 2019 found a clear correlation between wildfire severity and private industrial timberlands, which characteristically carry out plantation forestry,[847] noting that the odds of a high severity fire were 1.8 times more likely on private industrial land as compared to public land.[848] Other studies indicate that "the homogenous stand structure and high fuel continuity" that characterizes even-aged plantations can "foster rapid fire spread."[849] Prescribed fire techniques may increase the effectiveness of small-tree thinning, but remain underfunded.[850]

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845 *Id.* at 2 (noting that commercial logging often focuses on the "larger, more fire-resistant trees"). An egregious example occurred in the West Bend Project on the Deschutes National Forest. Characterized as a fuel reduction project, it included the removal of large, old trees that were fire-resistant. *See Oregon Wild Questions New West Bend Tree Removal Plan*, CENT. OR. DAILY NEWS (Mar. 4, 2022), https://centraloregondaily.com/oregon-wild-questions-new-west-bend-project-tree-removal-plan/ [https://perma.cc/YSC6-LM9C].

846 *See* Curtis M. Bradley et al., *Does Increased Forest Protection Correspond to Higher Fire Severity in Frequent-Fire Forests of the Western United States?*, 7 ECOSPHERE 1 (2016). However, others have pointed to dense stands with high fuel loads as contributing to extreme fire behavior. *See* Levine et al., *supra* note 657, at 397 (summarizing Carlin Frances Starrs et al., *The Impact of Land Ownership, Firefighting, and Reserve Status on Fire Probability in California*, 13 ENV'T RSCH. LETTERS 034025 (2018)).

847 Levine et al., *supra* note 657, at 398, 400. Prior studies had yielded conflicting results as to the correlation between fire severity and industrial managed forests. But as the authors point out, these studies had confined their analysis to single fire events, whereas the Levine study represented a meta-analysis over many years across California.

848 *Id.* at 400. Levine's team found "a clear, negative effect of both public and other ownership on the conditional probability of high-severity fire compared to industrial private ownership." The risks of high-severity fire also spilled over property boundaries to adjacent land: odds of high severity fire adjacent to private land were 1.4 times higher than three kilometers away from private land.

849 *Id.* at 397 (citing Koontz et al., *supra* note 660, at 489); Zald & Dunn, *supra* note 662.

850 *See* Keely Chalmers, *Thinning Forests Alone Helps Reduce Wildfire Risk, Oregon Researchers Say*, KGW8 (Sept. 29, 2021, 11:02 AM), https://www.kgw.com/article/news/local/wildfire/study-thinning-forests-reduces-wildfire-risk/283-d261de35-76cf-4a2c-bc65-c937ab735ffc [https://perma.cc/VBH5-7THE]; *see also* Levine et al., *supra* note 657, at 402 ("The lower probability of high-severity fire occurrence on public forest lands should not be interpreted as a tacit endorsement of public agencies' dominant management practices. . . . Regardless of ownership type, scientific evidence suggests that massive increases in prescribed fire, managed wildfire for resource benefit, and restoration thinning are necessary to mitigate fire severity across the state." (citing Little Hoover Commission, *Fire on the Mountain: Rethinking Forest Management in the Sierra Nevada* (2018)).

Fire analysts and forest scientists increasingly advocate for a reverse approach to treating public forests—"changing the focus from broadscale thinning to the home ignition zone," or stated differently, treat the landscape from the home out, not the forest in.[851] Pointing to studies showing that the vast majority of fires begin on private lands, rather than spread to private lands from adjacent public lands,[852] these experts urge efforts aimed at reducing the ignitability of vulnerable structures.[853] A combination of fire-resistant design, zoning, and fuels management on private lands, they point out, will address the growing danger of wildfire to Western communities without forest thinning on adjacent public lands. This paradigm shift to fire management and prevention is explored in the 2022 documentary, *Elemental: Reimagining our Relationship with Fire*.[854] Before committing to a massive thinning project across federal lands, the duty of prudence requires agencies to diligently explore the merits of this approach.

b. Consequences of Thinning for Other Ecological Trust Purposes

The duty of prudence likewise requires developing refined and robust analysis of expected outcomes and tradeoffs from alternative courses of action, calibrated to the ecological context of concern.[855] In this vein, it is important to probe arguments that thinning is a way to combat the climate crisis. Proponents of thinning maintain that tree removal remains necessary to prevent the carbon emissions that would result from wildfire consuming those trees.[856] Recent science casts

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851 *See* Law et al., *supra* note 78, at 7; *see also* Jack Cohen, *A More Effective Approach for Preventing Wildland-Urban Fire Disasters*, Or. 2019 Committee Report Doc. 209011, https://olis.oregonlegislature.gov/liz/2019I1/Downloads/CommitteeMeetingDocument/209011 [https://perma.cc/B7LF-YX33].

852 William M. Downing et al., *Human Ignitions on Private Lands Drive USFS Cross-Boundary Wildfire Transmission and Community Impacts in the Western US*, 12 SCI. REP. 2624, 5 tbl.1 (2022). More than 60% of fires crossing jurisdictional boundaries started on private property, and 28% ignited on national forests. *See also* Law et al., *supra* note 78, at 7.

853 Cohen, *supra* note 851; *see also* Law et al., *supra* note 78, at 7 ("Hardening home structures in areas with high risk of wildfires such as the wildland-urban interface has been found to be the most effective means to reduce property damage from wildfires.").

854 *See* YOUTUBE (Mar. 3, 2023), https://www.youtube.com/watch?v=U9cOLpUWPD8&ab_channel=Elemental%2CreimaginingWildfire [https://perma.cc/4ZG5-MYQR] (documentary trailer).

855 One commentator emphasizes the public trust duty of scrutiny before destruction of a trust resource as important in the context of logging projects justified in the name of wildfire prevention. *See* Meyer, *supra* note 55, at 217–18.

856 *See* Bartowitz et al., *supra* note 839, at 1 ("In order to reduce fire impacts, management policies are being proposed in the western United States to lower fire risk that

doubt on the generality of that premise. While it is certainly true that wildfires emit carbon—significant amounts—there sometimes lies an embedded paradox in resorting to thinning projects to avert these fire-caused carbon emissions. A growing body of research finds that forest thinning actually *increases* carbon releases in some cases.[857] The reason is that the logging itself emits carbon stored in the trees, and moreover, the removal of those trees erases any future carbon drawdown and storage associated with them (as explained in detail above in Section V.A.1.a.3). In one study of Eastside Oregon forests, authors found that large trees (over twenty-one inches in diameter) accounted for only 2%–3.7% of the trees in the forest but stored up to 46% of the total above-ground carbon in the forest.[858] From a carbon storage perspective, it would take approximately 310 years to regain maximum carbon biomass after harvest of large trees in that region.[859]

Leading scientific studies show that mechanical thinning may, in some cases, result in a "substantial net loss of forest carbon storage, and a net increase in carbon emissions that can substantially exceed those of wildfire emissions."[860] Wildfire carbon emissions are less than commonly thought, because most of the carbon from the forest remains after the fire and will take decades to decompose.[861] Moreover, fires create a mosaic of dead and live trees, and a portion of fire-resistant trees survive the fire and continue to live to draw down

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focus on harvesting trees, including large-diameter trees."); *see also* Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429, 1110–12 (2021); Cal. Exec. Order No. B-52-18 (2018); S.B. 762, 81st Leg. Assemb., Reg. Sess. (Or. 2021) (codified as amended in scattered sections of OR. REV. STAT.).

857 *See* John L. Campbell et al., *Can Fuel-Reduction Treatments Really Increase Forest Carbon Storage in the Western US by Reducing Future Fire Emissions?*, 10 FRONTIERS ECOLOGY & ENV'T 83 (2011); *Wildfire in a Warming World: Opportunities to Improve Community Collaboration, Climate Resilience, and Workforce Capacity: Before the H. Subcomm. on Nat'l Parks, Forests & Pub. Lands*, (2021) (statement of Dr. Beverly Law) ("The amount of carbon removed by thinning is much larger than that saved.").

858 Mildrexler et al., *supra* note 126, at 1.

859 Tara Hudiburg et al., *Carbon Dynamics of Oregon and Northern California Forests and Potential Land-Based Carbon Storage*, 19 ECOLOGICAL APPLICATIONS 163, 169 fig.2, 170 (2009) (indicating age at which maximum biomass is reached for Eastside forests).

860 Letter from 200 Leading Climate Scientists, *supra* note 632 (citing Tara Hudiburg et al., *Interactive Effects of Environmental Change and Management Strategies on Regional Forest Carbon Emissions*, 47 ENV'T SCIENCE & TECH. 13132–40 (2013)); *see also* Campbell et al., *supra* note 857.

861 *See* Law et al., *supra* note 78, at 7 ("Less than 10% of ecosystem carbon enters the atmosphere as carbon dioxide in PNW forest fires.").

atmospheric carbon.[862] Dr. Beverly Law summarizes the point: "Broad-scale thinning to reduce fire severity results in more carbon emissions than would be released by fire, creating a multi-decade carbon deficit that conflicts with climate goals."[863] As scientists explain in the 2020 letter to Congress, "logging in U.S. forests emits 10 times more carbon than fire and native insects combined. And, unlike logging, fire cycles nutrients and helps increase new forest growth."[864] Extrapolating science from Oregon, Washington, and California, one study estimates that harvest-related emissions in those states averaged five times the fire emissions.[865] Recently another research team compared wildfire emissions to those from thinning large trees and similarly concluded, "Our results show that increasing harvest of mature trees to save them from fire increases emissions rather than preventing them."[866]

Cutting the bigger trees as part of thinning projects—again, a likely predicate to making operations commercially viable—not only works at cross-purposes to fighting climate disruption but also ends key ecological services performed by those trees. As explained by Dr. Bev Law and colleagues, "Preserving and protecting mature and old forests would not only increase carbon stocks and [add] carbon accumulation, they would slow and potentially reverse accelerating species loss and ecosystem deterioration, and provide greater resilience to increasingly

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862 *Id.* (summarizing California study showing that "carbon emissions were very low at the landscape-level (0.6 to 1.8%) because larger trees with low combustion rates were the majority of biomass, and high severity fire patches were less than half of the burn area").

863 *Id.* at 6 ("[T]he amount of carbon removed by thinning is much larger than the amount that might be saved from being burned in a fire, and far more area is harvested than would actually burn."); *see also* Statement of Dr. Beverly Law, *supra* note 857. A more recent study further underscored the point:

> [H]arvest of mature trees releases a higher density of carbon emissions (e.g., per unit area) relative to wildfire (150–800%) because harvest causes a higher rate of tree mortality than wildfire. Our results show that increasing harvest of mature trees to save them from fire increases emissions rather than preventing them.

Bartowitz et al., *supra* note 839, at 1.

864 Letter from 200 Leading Climate Scientists, *supra* note 632 (citing N. L. Harris et al., *Attribution of Net Carbon Change by Disturbance Type Across Forest Lands of the Conterminous United States*, 11 CARBON BALANCE MGMT. 24 (2016)).

865 Tara W. Hudiburg et al., *Meeting GHG Reduction Targets Requires Accounting for All Forest Sector Emissions*, 14 ENV'T RSCH. LETTERS 1, 4 tbl.1 (2019) (showing 2001–2016 harvest-related emissions of 60.5 MT CO_2e and fire emissions of 20.7 MT CO_2e for the same time period); *see also* Mark E. Harmon et al., *Combustion of Aboveground Wood from Live Trees in Megafires, CA, USA*, 13 FORESTS 391 (2022).

866 Bartowitz et al., *supra* note 839, at 1.

severe weather events."[867] Prudent fiduciary management requires considering these values in advance of decisions. Dr. Law explains, "functionally separating carbon, water, and biodiversity and considering them independently leads to actions that inadvertently reduce the values of each, and can increase carbon emissions."[868]

In sum, the science of climate, forestry, fire prevention, and carbon sequestration is fast emerging.[869] When an agency embarks on categorical thinning, it may actually undermine sound trust management objectives, depending on the context. The tradeoffs of thinning a plantation remain dramatically different from thinning old growth, for example. While thinning may be appropriate at times, the duty of reasonable skill and prudence requires the agency to consider the best available science and carefully weigh the outcomes of various courses of action against the overall health of the trust.[870] As Dr. Beverly Law emphasized in a statement before Congress in 2021: "Impacts of tree removals on forest carbon stocks should be assessed as part of a *strategic decision-making process*. Preemptive broad-scale thinning will create a multi-decade carbon deficit that conflicts with other carbon climate goals."[871]

The prospect of enormous federal funding forthcoming as part of the Biden fire strategy may prompt agency trustees to launch projects that are not informed by the best available science required by the fiduciary duty to act with prudence. But it also affords a possibility: funding to solve the wildfire crisis could be harnessed to implement a program of prescribed fire, address home ignition zones, and establish reserves of naturally fire-resistant mature trees. The funding program requires careful and extensive analysis to carry out the trustees' duty of prudence and skill as required by the trust.

4. The Duty of Precaution

Another fiduciary duty requires the trustee to apply "common caution" in managing valuable trust assets.[872] In the private trust law

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867 Law et al., *supra* note 78, at 9.

868 *Id.* at 2.

869 *See id.*; *see also* Letter from 200 Leading Climate Scientists, *supra* note 632 (advocating for a "new and more scientifically sound direction" for forest management).

870 *See* Statement of Dr. Beverly Law, *supra* note 857 (stating that in dry fire-prone forests, thinning to remove small trees may be necessary in places as it would protect the larger trees that will accumulate the most carbon).

871 *Id.*

872 BOGERT, *supra* note 757, at 335.

context, this requires the trustee to avoid risky investments, even if those investments have the potential of high yields for the trust.[873] As is the case with private trusts, failure to exercise reasonable caution in managing the trust may result in irreversible harm to the res. With a private trust, this could result in financial ruin; with the public trust, this could result in ecological ruin—such as species extinction or runaway climate change.

The private trust law duty of caution translates into the "precautionary principle" (also referred to as the "precautionary approach") in the public trust context, requiring a trustee to err on the side of caution where uncertainty exists.[874] The precautionary principle appears in both the 1992 Rio Declaration of the United Nations Conference on Environment and Development, and in the United Nations Framework Convention on Climate Change.[875] As the Hawaii Supreme Court emphasized in the context of a public trust case involving public water sources:

> Where scientific evidence is preliminary and not yet conclusive regarding the management of fresh water resources which are part of the public trust, it is prudent to adopt "precautionary principles" in protecting the resource. That is, where there are present or potential threats of serious damage, lack of full scientific certainty should not be a basis for postponing effective measures to prevent environmental degradation . . . . [W]here uncertainty exists, a trustee's duty to protect the resource mitigates in favor of choosing presumptions that also protect the resource.[876]

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873 *Id.* (Trustees must avoid "new, speculative or hazardous ventures").

874 GEORGE T. BOGERT, TRUSTS 6th ed. 201 (West 1997); *see also* WOOD, *supra* note 22, at 200–03 (discussing that principle).

875 Principle 15 of the Rio Declaration states that "[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." U.N. GAOR, *Rio Declaration on Environment and Development* U.N. Doc. A/CONF.151/26 (Aug. 12, 1992), https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf [https://perma.cc/7RAB-M345]. And Article 3(3) of the UNFCCC states that "[t]he Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures." U.N. GAOR, *United Nations Framework Convention on Climate Change*, A/Conf.151/26 (Vol. 1) (Aug.12, 1992), https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf [https://perma.cc/KMA3-LHLN].

876 *In re* Water Use Permit Applications (*Waiahole Ditch*), 9 P.3d 409, 466 (Haw. 2000).

The court further called for providing reasonable "margins of safety" for instream trust purposes when establishing instream flow standards.[877] The Pennsylvania Supreme Court has also noted the duty of caution in the public trust context.[878]

Public trust opinions from other countries readily invoke the precautionary approach as a duty associated with sovereign ecological management.[879] In India's landmark case *M.C. Mehta v. Kamal Nath*, the Supreme Court of India underscored the precautionary principle as "the law of the land," making clear, "The 'onus of proof' is on the actor or the developer/industrialist to show that his action is environmentally benign."[880] And in Hungary, as Katalin Sulyok reports, the Hungary Constitutional Court also applied a "preventative action" principle of caution; she summarizes, "In line with the principle, the legislature bears the burden of proving with a high level of certainty . . . that a particular measure will not deteriorate the state of the natural environment. Even tolerating the risks of such an impairment runs counter to the State's obligation."[881]

As a fiduciary standard of care, the precautionary approach should permeate all facets of forest management. It would seem axiomatic that, as uncertainty and potential damage increases, the level of precaution should likewise increase. Thus, as future climate disruption will affect both the forests and their corollary resources in unpredictable ways, the precautionary principle should yield maximum protection of forest ecology in its functioning natural integrity.[882] The approach carries particular weight in light of the role forests play in sustaining water supplies. As an Oregon court recently declared in another public trust context involving public access to Lake Oswego, "To lightly hand over this precious public asset (Lake Oswego) to

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877 *Id.* at 468.

878 Pa. Env't Def. Found. v. Pennsylvania, 279 A.3d 1194, 1202 (Pa. 2022) (noting basic fiduciary duty of trustee to exercise "reasonable care, skill and caution").

879 BLUMM & WOOD, *supra* note 25, at 538, 475–76, 418, 462–63, 481 (discussing and excerpting cases from Colombia, the Netherlands, Pakistan, and Kenya).

880 *Id.* at 455 (excerpting M.C. Mehta v. Kamal Nath, 1 S.C.C. 388 (1997) (India)).

881 *See* Sulyok, *supra* note 433, at 365–66 (also observing that "[s]uch an interpretation of the duties of the public trustee squares well with international trends, signaling that courts increasingly use the public trust doctrine as a vehicle to establish precautionary fiduciary obligations for the sovereign trustees"); *see also* Marcel Szabó, *The Precautionary Principle in the Fundamental Law of Hungary: Judicial Activism or an Inherent Fundamental Principle? An Evaluation of* Constitutional Court Decision No. 13/2018. (IX 4.) AB on the Protection of Groundwater, 7 HUNG. Y.B. INT'L & EUR. L. 67 (2019).

882 *See* Souder & Behan, *supra* note 603, at 284 (noting that "any effects that forestry impacts have on peak flows will intertwine with climate in increasingly complex ways").

private control at a time *when fresh water is increasingly scarce and valuable* 'would be a great wrong upon the public for all time, the extent of which cannot, perhaps, be now even anticipated.'"[883]

The precautionary principle has bearing in multiple forest management contexts. One explored here involves the obvious and pressing need for the precautionary principle to curb chemical forestry practices in Oregon. Typically, timber corporations douse clear-cut areas with chemicals to impede the growth of competitor vegetative species and to kill pests.[884] On average, these companies spray hundreds of thousands of pounds of chemicals per year,[885] many of which are known toxins and harmful to human health and/or fish and wildlife.[886] One of the commonly used chemicals, for example, is 2,4-D, an ingredient in Agent Orange.[887] The arguments for a precautionary approach reach a pinnacle in the realm of chemical exposure because the regulatory mechanisms to assure chemical safety at the source of production are notoriously deficient.[888]

Industrial forestry applications of chemicals typically occur through helicopter aerial spraying, a broadscale method susceptible to causing

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883 Kramer v. City of Lake Oswego, No. CV12100913, slip op. at 11 (Cir. Ct. Or. Apr. 19, 2022) (citing Guilliams v. Beaver Lake Club, 175 P. 437, 442 (Or. 1918)) (emphasis added).

884 *See* Souder & Strimbu, *supra* note 650, at 163 fig.6-2, 164 (The following were ten active ingredients in ODF forestry application notifications in Oregon between 2015–2018, reported as herbicide and the percentage of total applications: Glyphosate 16.64%, Sulfometuron methyl 15.41%, Triclopyr 13.91%, Imazapyr 12.72%, Metsulfuron methyl 12.10%, Clopyralid 9.32%, Hexazinone 8.81%, 2,4-D 8.54%, Atrazine 5.80%, Aminopyralid 2.85%).

885 *See* Clarren, *supra* note 83 ("Timber companies hire licensed helicopter pilots to spray hundreds of thousands of pounds of herbicides each year on forests throughout Oregon."); *see also* Souder & Strimbu, *supra* note 650, at 163 ("From 2015–2018 there were 11,728 chemical application notifications covering 29,511 activities (usually an individual harvest unit or road) submitted through ODF's FERNS.").

886 *See* Clarren, *supra* note 83 ((reporting harmful effects of Atrazine and 2,4-D, two commonly used chemicals in forestry, including damage to the endocrine system, reproductive system, and links between atrazine exposure and certain cancers, and noting that interaction of chemicals in mixed applications may magnify the harm).

887 *Id.*

888 *See* Nicholas Ashford, *The Legacy of the Precautionary Principle in US Law: The Rise of Cost-Benefit Analysis and Risk Assessment as Undermining Factors in Health, Safety and Environmental Protection*, *in* IMPLEMENTATION OF THE PRECAUTIONARY PRINCIPLE IN THE NORDIC COUNTRIES: LESSONS FROM THE EU AND THE UNITED STATES 352 (Nicolas de Sadeleer ed., 2007).

chemical drift away from the targeted area.[889] High-profile accounts tell of local communities next to industrial forestlands claiming to have been poisoned or sickened by such chemical spraying.[890] The chemicals have the potential to enter downslope water supplies,[891] and some have been detected by sampling.[892]

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889 *See* Clarren, *supra* note 83 ("The timber-dusting helicopters along Oregon's coast fly as high as 80 feet above 40-degree slopes, and torrential rain and unpredictable ocean winds can pull chemicals downslope during application, making it nearly impossible to prevent herbicides from drifting away from their targets.").

890 *Id.* Clarren recounts the plight of a Gold Beach community on the Pacific coast and the harmful effects alleged by some locals to be directly linked with a spraying operation. Clarren writes:

> It began with the whir of a helicopter and a bad smell and the even worse memories that the smell invoked, memories better left on the other side of the world. Within 24 hours of the incident, Keith Wright had a terrible cough, and blood poured from his mouth onto his naked body, staining the shower pink . . . . An investigation completed this summer by the Oregon Department of Agriculture reveals that, on the same day last year [contractors for a timber corporation] crisscrossed the valley north of Gold Beach where Wright lives. Nozzles on the helicopter doused four recent clear-cuts, and then illegally sprayed surrounding properties with a cocktail of herbicides containing substances such as triclopyr, imazapyr and 2, dichlorophenoxyacetic acid, better known as 2,4-D, an ingredient in Agent Orange, the infamous defoliant. Wright knew about Agent Orange; he was a gunner during the Vietnam War, when it was heavily used.

Id.; *see also* Chuck Thompson, *"Big Day for Oregon": Legislature Unites to Pass Major Forest Bill*, COLUMBIA INSIGHT (July 6, 2020), https://columbiainsight.org/big-day-for-oregon-legislature-passes-major-forest-bill/ [https://perma.cc/UF9R-GJKL]; Moriarty, *supra* note 819.

891 *See* Souder & Strimbu, *supra* note 650, at 175 (noting that "[i]f application occurs when the ephemeral or intermittent channels contain water, then the herbicides may reach perennial streams," and that "when occurring immediately after herbicide application, [tested streams] can contain high concentrations [of the chemical]").

892 *See id.* at 291 (noting that "pesticides are commonly detected in surface waters," though at low levels that are not accurately measured); *see also* Schick & Davis, *supra* note 20 ("In the past two decades, Oregon environmental regulators identified industrial logging as a risk to more than 170 public water systems, listing clear-cutting, road building and pesticide spraying as potential sources of contamination."); Clarren, *supra* note 83 (reporting on the Triangle Lake area next to industrial forestlands: "In 2011, the EPA tested the urine of locals and found atrazine and 2,4-D in every sample"). In 2013, the state DEQ tested water in six public watersheds along Oregon's northern coast, where industrial logging is prevalent. *Id.* The agency found herbicides atrazine, glyphosate and sulfometuron-methyl in multiple locations; these "likely ended up in tap water," though uncertainty remains because of the state's failure to routinely test water supplies. *Id.*; *see also* LAURIE BERNSTEIN ET AL., OREGON'S INDUSTRIAL FORESTS AND HERBICIDE USE: A CASE STUDY OF RISK TO PEOPLE, DRINKING WATER AND SALMON, at Executive Summary Page 3 (Beyond Toxics, 2013).

A step-wise logic shows the importance of precaution when a trustee considers allowing aerial chemical spray[893]: (1) some of the chemicals commonly used in aerial forest spraying are known to be toxic to humans and other life; (2) their impact on ecological processes is not well understood (including potential synergistic effects of chemicals used in untested combinations); (3) there is a lack of adequate data or reporting on the actual applications;[894] (4) sprayed on a clear-cut slope, chemicals may contaminate a watershed and enter public trust water supplies, some of which are used to supply communities with drinking water; and (5) insufficient monitoring exists as to the levels of chemicals in these water supplies. In light of potentially grave harm to the public's beneficial use of water supplies, the precautionary approach confronts uncertainty by halting dangerous activity until such time as the uncertainty is resolved.

Aerial herbicide applications have been banned on U.S. Forest Service lands since a successful lawsuit abruptly stopped them in 1984.[895] On those lands, vegetative control is accomplished by manual and mechanical removal. Such practices, in place for nearly four decades across huge swaths of forest, show the feasibility of this alternative—though it came at considerable expense and inconvenience to the timber industry.[896] Some communities fervently advocate an aerial spraying ban in watersheds that supply drinking water.[897] While a local aerial spray ban was passed in Lincoln County

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893 This discussion does not address the obvious toxic tort aspect falling outside the realm of public trust law.

894 *See* Souder & Strimbu, *supra* note 650, at 205 ("While ODF FERNS provides information on where and possibly when forest chemicals will be used, it allows multiple chemicals to be listed over long periods of time, with no subsequent reporting on what was actually applied unless a complaint was filed."). The TREES TO TAP report also notes the lack of adequate data and reporting on chemical use, insufficient water quality sampling, and for studies that do exist, possible flawed design and possible industry bias. *See id.* at 205–06; *see also* Clarren, *supra* note 83 (reporting that the Oregon Department of Agriculture failures to monitor chemical applications and only follows up when asked, quoting agency official, "A lot of use goes on that we don't know about").

895 *See* Merrell v. Block, 20 ERC 1620 (D. Or. 1983), *aff'd sub nom.*, Save Our Ecosystems v. Clark, 747 F.2d 1240, 1242 (9th Cir. 1984); *see also* Linda Killian, *Herbicide Spraying Ban Could Cost $10 Billion*, UPI ARCHIVES (Mar. 3, 1984), https://www.upi.com/Archives/1984/03/03/Herbicide-spraying-ban-could-cost-10-million/4008447138000/ [https://perma.cc/9ZQ4-Y66M].

896 Public trustees must make decisions for the benefit of the public beneficiaries and not for the primary purpose of benefiting a private party. *See supra* Section V.A.4.

897 For example, the North Coast Communities for Watershed Protection takes this position: "No more clearcutting and pesticide spraying in our drinking water sources, regardless of land ownership." *March & April Newsletter*, NORTH COAST COMMUNITIES

in 2017, the Lincoln County Circuit Court in 2019 found it preempted by the Oregon Pesticides Control Act, which places control of pesticides in the state alone.[898] In 2020, the Oregon legislature passed a law called the Forest Aerial Spray bill (SB 1602) which sets some bounds on aerial spraying but does not ban it.[899] Lauded as a victory by some environmental groups, it markedly falls short of protecting public trust assets. Its main provisions require notice to the public of upcoming sprays and buffers along streams. The notice of damage does nothing to protect public trust assets from contamination, as it is primarily intended to alert citizens of the personal danger of exposure during the aerial application. The buffers, while perhaps increasing protection to fisheries, do little to resolve the uncertain chemical fate and transport through the landscape over time,[900] much less the potential harm to the landscape ecology from chemicals achieving their intended effect of killing species.

Broadscale, unmonitored chemical applications persist in arguable breach of the precautionary principle—and are just one part of a systemic pattern of fiduciary violation on the part of state government agencies charged with protecting vital ecological public trust assets.

5. The Duty of Furnishing Information to Beneficiaries (Duty of Accounting)

In the private trust law context, trustees have a duty to furnish trust beneficiaries with information regarding the financial health of the trust—providing all information "in which the beneficiary has a legitimate concern"—information such as income, expenses, balances, location of accounts, etc.[901] In the public trust law context, this equates to (1) information about the health of the natural resources protected

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FOR WATERSHED PROTECTION (2022), https://healthywatershed.org/wp-content/uploads/2022/04/March-and-April-2022-NCCWP-Newsletter-Email-.pdf [https://perma.cc/F8LP-64SD].

898 Capri v. Lincoln Cnty., No. 17CV23360 (Cir. Ct. Or. 2019). The ruling failed to consider the public trust. In another preemption context concerning local regulation of fracking, the Pennsylvania Supreme Court found that the state law preempting local control violated the public trust and other constitutional provisions. *See* Robinson Twp. v. Pennsylvania, 147 A.3d 536 (Pa. 2016) (plurality opinion).

899 *See* Section II.D.3 (discussing bill); *see also* Thompson, *supra* note 890.

900 *See* Souder & Strimbu, *supra* note 650, at 206 (noting state's lack of fate and transport models showing how the chemicals move downstream and change with time and conditions).

901 Zuch v. Conn. Bank & Trust Co., Inc., 500 A.2d 565, 568 (Conn. App. Ct. 1985). For discussion of the accounting duty, see Restatement (Third) of Trusts § 82(1) (AM. L. INST. 2007); *see also* 76 Am. Jur. 2d *Trusts* § 371 (2011).

by the trust and (2) an economic and ecological evaluation of alternative courses of management action.[902] This duty of accounting plays a reinforcing role necessary to meet many of the other fiduciary duties. For example, without an accurate accounting of trust resources, it is impossible for trustees to gauge whether the trust *res* is being protected or drained. Moreover, an accounting is necessary for the trustee to bring NRD claims against third parties who damage the trust. But while trustees depend on an accurate accounting in order to fulfill their fiduciary duties, the duty of accounting is ultimately owed to the beneficiaries in order to provide them with information crucial to determining whether the trustees are fulfilling their fiduciary duties. Accordingly, the furnished accounting must be presented in such a way that it is understandable to the beneficiaries.

In the area of forest management, the duty of accounting breaks into several components. The public beneficiaries are entitled to know how much mature and old-growth forest remains in Oregon, and what age classes comprise the remainder. A public trust accounting would also require a calculation of carbon storage from trees and carbon losses from harvest, along with economic and environmental assessments of the value of carbon storage. A complete accounting must, of course, also account for the ancillary benefits of a conserved forest to fish and wildlife habitat, water source protection, recreation, and any other public trust uses. Such natural capital accountings could help reframe the trustees' approach to managing the Oregon Forest Trust because they could demonstrate the myriad of benefits, both ecological and economic, in conserving the forest. This type of accounting should be a prerequisite to any harvest decisions made by a trustee.[903] Without

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902 For discussion of the duty of accounting in the public trust context, see WOOD, *supra* note 22, at 203–04.

903 For example, in connection with the establishment of the Elliott State Research Forest and the prospect of significant logging of mature forest under OSU's stewardship, Doug Pollock, Founder of Friends of OSU Old Growth, wrote to the legislature essentially suggesting an accounting:

> With this bill poised to release the Elliott from its financial obligations to the Common School Fund (CSF), we should ask why it fails to account for the potential value of the forest's enormous carbon reserves (estimated at roughly 10,000,000 tons). With the price of carbon on the European futures market trading at over $100/ton, the Elliott's carbon could be worth over $1 billion (far more than the timber).

Letter from Doug Pollock, Friends of OSU Old Growth, to Or. Legislature (Feb. 3, 2022), https://olis.oregonlegislature.gov/liz/2022R1/Downloads/PublicTestimonyDocument/33872 [https://perma.cc/NQK8-33RT] (letter regarding amendments to SB 1546—Establishing an Elliott State Research Forest (ESRF)).

an accounting, the trustees may simply perpetuate a paradigm of harvest-driven forest management that becomes increasingly obsolete and destructive amidst a climate emergency.

Some trustees are making modest moves to provide these natural capital accountings. President Biden recently announced what could be called an accounting when he issued an executive order compelling an inventory of mature and old-growth forest to be made available to the public.[904] Oregon's Secretary of State Shemia Fagan announced that her office would undertake an audit showing the value of carbon dense forest to water systems.[905] Previously, the Oregon DEQ prepared an accounting of the impact of industrial forestry on Oregon's drinking water systems, but the report was shuttered apparently due to pressure from the timber industry[906]—which, if true, would manifestly amount to a breach of the agency's fiduciary duty to the public to provide information on trust management. A particularly troubling practice in conflict with the state's accounting duty is that certain state records of harvest and pesticide incidents are routinely destroyed after just five years.[907] These records remain important long after five years for public beneficiaries to evaluate their trustees' performance over time. For example, an OSU team that examined the effect of industrial chemical application on forestlands was hindered in its assessment by the fact that the relevant records were destroyed after five years.[908]

VI
THE TRUST WITHIN THE PRESENT OWNERSHIP AND REGULATORY PARADIGM

The Part above evaluated, irrespective of ownership, many of the current forest practices and regulations in Oregon through the lens of fiduciary standards imposed by the public trust principle. This Part

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904 Exec. Order No. 14072, 87 Fed. Reg. 24851 (Apr. 22, 2022) (Strengthening the Nation's Forests, Communities, and Local Economies).

905 *See* Olivia Recheked et al., OR. SEC'Y OF STATE, AUDITS DIV., *Advisory Report: State Leadership Must Take Action to Protect Water Security for All Oregoni*ans, https://sos.oregon.gov/audits/Documents/2023-04.pdf [https://perma.cc/R3TY-BDJK].

906 *See* Schick, *supra* note 605 ("The fate of that report offers a glimpse at what can happen when a state environmental agency's work runs afoul of a politically influential industry. It also shows how, on certain forestry issues, the agenda of state regulators aligns more closely with the timber industry than with concerned citizens.").

907 Souder & Behan, *supra* note 603, at 285 ("Most state records . . . are destroyed after five years.").

908 *Id.* ("Records retention policies constrained our ability to evaluate longer-term trends for both harvest and pesticide incidents.").

unpacks the Oregon Forest Trust by ownership and briefly examines each category with reference to the trust framework as explained above. Rather than evaluating each ownership category against every fiduciary standard—as would a full trust auditor using a checklist of duties—this Part summarizes some of the foremost challenges and highlights priorities for change. Underpinning this analysis is the often-stated principle of public trust jurisprudence that compliance with legislative and regulatory requirements does not equate to compliance with the trust.[909] Rather, the statutory and regulatory frameworks must be measured against the fiduciary yardstick of the trust.

A. Federal Lands

Clearly, despite scant law on the matter, the federal forestlands are held in public trust.[910] While federal land managers characteristically engage in more forest conservation than their private industry counterparts, the future direction of federal management has notable pitfalls that could seriously compromise forest ecology in breach of trust. We highlight several below.

1. The Biden Wildfire Plan

As previously explained, in early 2022 the Biden administration announced an ambitious plan to reduce the fire risk on forestland that borders large population centers or critical infrastructure.[911] The plan calls for a paradigm shift in land management and a dramatic increase in thinning and prescribed burns in forests across the American West.[912] While, in the past, the agency has treated up to two million acres per year, the new plan calls for fifty million acres to be treated over the next ten years.[913] The plan will focus on key "firesheds"—large forested areas near infrastructure (approximately 250,000 acres) that the agency has identified as forests with a high likelihood of ignition.[914] In Oregon, these high-risk fire zones include areas in Southern Oregon, the Cascade Range, and the Columbia River

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909 *See* Luscher v. Reynolds, 56 P.2d 1158 (Or. 1936); *see also* Kootenai Env't All., Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085, 1095 (Idaho 1983).

910 See discussion at *supra* note 453 and accompanying text.

911 *See* Lukpat, *supra* note 838.

912 U.S. FOREST SERV., *supra* note 838, at 28.

913 *Id*. at 26, 30; *see also* Lukpat, *supra* note 838.

914 U.S. FOREST SERV., *supra* note 838, at 4.

Gorge.[915] Of the fifty million acres planned for treatment, at least twenty million will be National Forest System lands; the other thirty million-plus acres will be an amalgamation of other federal, state, tribal, and private lands.[916]

The plan will cost an estimated $50 billion over ten years,[917] a dramatic increase from the estimated $1.9 billion the government spent annually on wildfire suppression from 2016 to 2020.[918] As discussed in Section V.B.3, some have criticized the plan for not bringing any new approaches to the table, instead relying largely on logging, which will release more carbon into the air at a time when the country needs to radically reduce carbon emissions to address climate change.[919] Even post-fire thinning is problematic, as research suggests that the vast majority of carbon remains in trees and "snags" after forest fires, and that thinning forests post-fire leads to less resilient forests and increased carbon emissions.[920] Critics note that the plan focuses on the outdated paradigm of working to prevent and fight wildfire instead of learning to live with wildfire. The blanket approach of broad thinning to abate wildfire does not bring to bear the best available science and comparative analysis that the fiduciary duty of prudent management requires.

2. The Northwest Forest Plan

At the time it was crafted, the NFP represented the world's largest ecosystem management plan, grounded in credible conservation science.[921] At the cutting edge of sustainable forest management emerging from a bitter regional history of timber wars, the NFP was ambitious and audacious and, as two observers note, "One of the chief virtues of the NFP is that over a quarter-century after its promulgation,

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915 Monica Samayoa, *New Federal Plan Aims to Reduce Wildfire in High-Risk Areas of Oregon*, OR. PUB. BROAD. (Jan. 21, 2022, 5:00 AM), https://www.opb.org/article/2022/01/21/federal-plan-aims-to-prevent-wildfires-in-high-risk-areas-oregon/.

916 *See* U.S. FOREST SERV., *supra* note 838, at 7.

917 *See* Lukpat, *supra* note 838.

918 *Id.* at 30. Some of the money will come from the recently passed Infrastructure Investment and Jobs Act. *Id.* at 10.

919 Samayoa, *supra* note 915.

920 Harmon et al., *supra* note 865, at 19; *see also Seven Best Kept Secrets About Forest Fires*, CRAG L. CTR. (2018), https://crag.org/wp-content/uploads/2018/05/Secrets-of-Fire-16-May-2018.pdf [https://perma.cc/4HLP-EYXU].

921 *See* Blumm et al., *supra* note 6, at 208.

it still exists."[922] But it stops well short of meeting public trust obligations across federal lands in Oregon.

First, the NFP no longer encompasses the valuable mature and old-growth forests managed by BLM as part of the O&C Lands.[923] Moreover, even the areas subject to the plan are suffering losses in older trees and dependent wildlife species,[924] as the plan allows old-growth logging in the forest matrix surrounding designated reserves.[925] And, notably, harvest pressures have not abated: the greatest average annual harvest volume on Forest Service lands nationwide continues to be from national forests in Oregon and Washington.[926] Second, the NFP does not internalize the duty of precaution. While the NFP was conceived as a 100-year plan[927] that would adapt to changing ecological and social conditions,[928] after nearly thirty years following its implementation, the plan has yet to be revised, even in the midst of rapidly changing landscape conditions due to climate disruption, drought, and intensifying wildfires.[929] Many of the adaptive management and monitoring strategies that were key to a precautionary

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922 *Id.* at 156.

923 President Obama withdrew most of these lands in 2016. *See* U.S. DEP'T OF INTERIOR BLM, *supra* note 156 and accompanying text; *see also* Darling, *supra* note 157 and accompanying text.

924 Species associated with old-growth forests have continued to decline since the NFP's first implementation. *See* Daniel Jack Chasan, *The Northwest's Forest Plan: 20 Years of Fighting*, CROSSCUT (Apr. 13, 2014), https://crosscut.com/2014/04/northwest-forest-plan-20-years-battles-obama [https://perma.cc/4J9U-YCMW].

925 *Id.* (claiming that despite the modest improvements that the NFP has brought, "There has been a lot of old-growth logged in Oregon since 1994."). *See also Mature and Old-Growth Logging Sale Undermines Biden Climate Policy; Threatens McKenzie River, Habitat*, CASCADIA WILDLANDS (Aug. 2, 2022), https://www.cascwild.org/press-release-mature-and-old-growth-logging-sale-undermines-biden-climate-policy-threatens-mckenzie-river-habitat/ [https://perma.cc/QD2G-HJGK] (discussing the proposed "Flat Country Project" on Willamette National Forest, where "vast majority of the proposed logging would be in mature and old-growth forests, with over 1,000 acres of clearcutting").

926 CONGRESSIONAL RESEARCH SERVICE, TIMBER HARVESTING ON FEDERAL LANDS 10 (2021).

927 *See* Blumm et al., *supra* note 6, at 196 (underscoring the requirement to revise forest plans, including the NFP, every 15 years). One of the objectives of the NFP was

> to create a connected old-growth forest ecosystem to more effectively ensure the viability of hundreds of associated species. It was recognized, however, that the reserve network would not be functional for *at least a century* because much of the plan area remained highly fragmented and the forests within a significant portion (~40%) of the reserves were not classic old growth.

Strittholt et al., *supra* note 18, at 371 (emphasis added).

928 Benjamin T. Phalan et al., *Impacts of the Northwest Forest Plan on Forest Composition and Bird Populations*, 116 PNAS 3322, 3323 (Feb. 19, 2019).

929 Blumm et al., *supra* note 6, at 154–56.

approach were disregarded or changed by past administrations.[930] As the NFP moves into a process for revision, commentators sensibly suggest more older-tree protection, the reentry of O&C Lands, and response to climate change dynamics, among other measures.[931]

3. Eastside Screens

As explained above in Section II.B.2, the 21-inch rule (part of the Eastside Screens) protected live trees larger than twenty-one inches in diameter on Forest Service lands east of the Cascades for nearly three decades, but the rule was amended by the Trump administration to eliminate this clear protection and replace it with discretion embodied in a nonbinding guideline.[932] The amendment to the Eastside Screens is presently the subject of an ongoing court challenge on the basis that the administration failed to comply with NFMA, NEPA, and (as expressed in a sixty-day notice of intent to sue letter) the ESA.[933] The rule took effect January 15, 2020, five days before President Trump left office, and affects eight million acres of land across eastern Oregon and Washington—an area the size of Maryland.[934] Despite intense controversy generated by the proposed rule change and the opposition of 115 independent scientists as expressed in an Open Letter to the Forest Service on the Importance of Large, Old Trees and Forests,[935] the administration accomplished the change with no Environmental Impact Statement, dubiously characterizing it as an "insignificant" amendment under NFMA.[936]

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930 *See* discussion at *supra* note 838 and accompanying text.

931 Blumm et al., *supra* note 6, at 196–212 (offering parameters for revising the NFP).

932 *See* discussion at *supra* Section II.B. and accompanying text; *see also* Parks, *supra* note 125.

933 Complaint at 3–4, Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL (D. Or. June 14, 2022); *see also Press Release*, Craig Law Center, *Lawsuit Filed to Protect Big Trees in Oregon and Washington* (June 14, 2022), https://www.hellscanyon.org/_files/ugd/998edb_d6db4335750449cab7ffd4560fdc6173.pdf [https://perma.cc/8ZWZ-VJW9]; *see also supra* note 128 (describing the Magistrate Hallman's recommendation of an injunction against the amendment).

934 Parks, *supra* note 125; *see also* Complaint at 4, Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL (D. Or. June 14, 2022) (describing area).

935 Letter from Scientists to the Forest Service (Oct. 13, 2020), https://wild-heritage.org/wp-content/uploads/2020/10/EastsideORtreeprotectionsignon10-13-20.pdf [https://perma.cc/Z6SG-77A4] (titled the Importance of Large, Old Trees and Forests) [hereinafter Open Letter]; *see also* Parks, *supra* note 125 (describing environmental opposition to the amendment); *Press Release*, *supra* note 933 (public involvement in opposition).

936 Complaint at 3, Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL (D. Or. June 14, 2022).

The Trump administration's eleventh-hour revocation of the 21-inch rule followed a 2020 scientific review undertaken by the Forest Service to assess changes in the ecological and social landscape since the Eastside Screens had first been promulgated.[937] The report emphasized fire and dynamic conditions of the forests and expressed a need for flexibility to carry out a multitude of values on the forests.[938] The report also emphasized collaborative forestry as a central theme and management goal, characterizing it as "[b]uilding and maintaining trust and a common vision for landscapes and ecoregions among stakeholders."[939] At the time of the amendment, Forest Service officials defended the change as providing needed flexibility to shape landscapes to be more resilient to fire and increase the stock of old trees over the long term.[940] Forest advocacy groups, on the other hand, saw the new clearance to cut big trees as "nothing more than a wink and a wave to the timber industry from former President Donald Trump as he was leaving the White House," an action timed with sweeping removal of spotted owl critical habitat protections across 3.4 million acres of Westside forests the same week.[941]

Notwithstanding the Forest Service's call for needed flexibility, the change from a rule to a guideline abruptly allows vast discretion where none existed before, and that in turn opens the door for problematic political influence. As discussed earlier in this Article, agencies characteristically use their discretion over public property to bend to the interests of politically powerful industries and privateers—"The code words fool no one involved: more 'discretion' means that industry

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937 PAUL F. HESSBURG ET AL., THE 1994 EASTSIDE SCREENS LARGE-TREE HARVEST LIMIT: REVIEW OF SCIENCE RELEVANT TO FOREST PLANNING 25 YEARS LATER (U.S. DEP'T AGRIC., 2020), https://www.fs.usda.gov/pnw/pubs/pnw_gtr990.pdf [https://perma.cc/QYR9-QJLP].

938 *Id.* at 23–28 (fire and climate discussion); *see also id.* at 78–79 (stressing the "importance of numerous considerations and tradeoffs in management of east-side forests" and recommending "opportunity for a degree of flexibility").

939 *Id.* at 79; *see also id.* at 16–20 (discussion of collaborative forestry); *Burdensome Litigation and Federal Bureaucratic Roadblocks to Manage Our Nation's Overgrown, Fire-Prone National Forests: Before the H. Subcomm. on Fed. Lands*) (2017) (statement of Susan Jane Brown with the Western Environmental Law Center applauding the collaborative process in parts of Eastern Oregon).

940 Parks, *supra* note 125.

941 Bradley W. Parks, *Trump Administration Slashes Critical Habitat for Northern Spotted Owl by 3.4 Million Acres*, OR. PUB. BROAD. (Jan. 13, 2021, 11:36 AM), https://www.opb.org/article/2021/01/13/northern-spotted-owl-critical-habitat-slashed/ [https://perma.cc/R5BY-4NX4].

gets to cut more timber."[942] While local collaborative frameworks (such as those celebrated by the 2020 Forest Service review) are positive in many respects and can propose worthwhile solutions, they are hardly immune from pressures to exploit the public's resources—pressures which may be intensified by the social dynamics of interpersonal relationships that accrue over time spent in local collaborative forums. A solution emerging from a collaborative framework may or may not be consistent with the public trust. Collaborators may represent discrete interests or local community interests that do not reflect broader public trust beneficiary interests, particularly those of future generations. The fact remains that the Forest Service is a sovereign trustee of public assets, and it may not use its discretion to simply embrace a solution emerging from a collaborative process. Instead, it must make a discerning assessment as to whether the proposed action carries out its fiduciary duties. Removal of the 21-inch protection contravenes multiple duties as discussed below. Notably too, weakening protections that had been in place for so long violates a "non-derogation" principle.[943]

The amendment removes clear protection for trees that carry some of the highest values on the forest—"large and old trees [that] have outsized ecological and social importance," as a court challenge, *Greater Hells Canyon Council v. Wilkes*, asserts.[944] A probing scientific account of the value of Eastside trees (prepared in response to the proposed rule revocation) calls the large trees "irreplaceable bio-cultural legacies" that should be left standing.[945] President Biden's executive order protecting old-growth trees[946]—which includes a share of Eastside large trees[947]—underscores their irreplaceable role in forests. It is well-known that the larger trees carry matchless benefits for water quality, riparian health, and biodiversity; they promote

942 *See* Houck, *supra* note 749 and accompanying text; *see also* discussion at *supra* notes 22–24.

943 In 2020, a Hungarian court applied this principle in the forest context. Alkotmánybíróság [Constitutional Court] June 9, 2020, AB 14/2020 (VII. 6.) (*The Hungarian Forests Decision*) (Hung.); *see supra* note 584. *See* discussion at Section IV.C.2.g.

944 Complaint, *supra* note 130, at 2.

945 Dominick A. DellaSala & William L. Baker, *Large Trees: Oregon's Bio-Cultural Legacy Essential to Wildlife, Clean Water, and Carbon Storage*, WILD HERITAGE 2, 5 (Dec. 2020), https://wild-heritage.org/wp-content/uploads/2020/12/Large-Trees-Report-12.2020.pdf. [https://perma.cc/34N4-9M4A].

946 *See* discussion at *supra* note 681.

947 HESSBURG ET AL., *supra* note 937, at 4 ("[S]ome [Eastside] old trees are small, and some large trees are young[.]").

recreational opportunity as well.[948] Perhaps most crucially, these trees carry indispensable value for their carbon storage capacity.[949] As emphasized in the scientists' Open Letter to the Forest Service, "Large, old trees store a disproportionate amount of carbon,"[950] and, as noted earlier in this Article and also averred in the *Greater Hells Canyon Council* Complaint, a study of Eastside Forests shows that trees greater than twenty-one inches "account for 3% of trees, yet store 42% of the aboveground carbon."[951] Against the intensifying climate emergency, with windows of opportunity to stave off tipping points fast closing,[952] the large carbon-storing trees carry unprecedented premium importance, both because their harvest would further pollute the atmosphere, and because their protection would allow continued carbon absorption (depending on the species' lifespan).[953]

Against such incomparable value, the fiduciary duty requiring a precautionary approach[954] reaches its pinnacle. The risk of losing rare public trust assets to discretion-driven decisions is precisely what the duty of caution is designed to prevent. An operable way of carrying out the duty of caution is to establish a firm presumption of protecting trees over twenty-one inches,[955] accompanied by a process of refuting the presumption with discernable methodology clearly tied to the other fiduciary duties. That allows for the flexibility that the Forest Service seeks while also keeping automatic protection in place. The Forest Service, as trustee, would bear the burden of proving that removal of these large trees would comply with its fiduciary duty to protect the forest and other public trust assets such as water, wildlife, fisheries, and atmosphere, and, further, that removal would restore a trust inventory

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948 *See* DellaSala & Baker, *supra* note 945, at 2; Open Letter, *supra* note 935.

949 *See* Mildrexler et al., *supra* note 126, at 3.

950 Open Letter, *supra* note 935.

951 Complaint, *supra* note 130, at 15*; see also* Law et al., *supra* note 78, at n.4 (noting 43% carbon storage).

952 *See* António Guterres, U.N. Secretary-General, Remarks at High-Level Opening of COP27 Climate Implementation Summit in Sharm El-Sheikh (Nov. 7, 2022) ("Humanity has a choice: cooperate or perish. It is either a Climate Solidarity Pact—or a Collective Suicide Pact.").

953 *See* DellaSala & Baker, *supra* note 945, at 2 ("When logged, large trees release most (up to two-thirds) of their stored carbon to the atmosphere (contributing to global overheating) and their emitted carbon takes decades to centuries to recover, if ever.").

954 *See supra* Section V.B.4.

955 See Dominick A. DellaSala et al., *Have Western USA Fire Suppression and Megafire Active Management Approaches Become a Contemporary Sisyphus?*, 268 BIOLOGICAL CONSERVATION 109499, at 8 (Feb. 2022) (stating that the precautionary principle in forest management requires shifting burden of proof to the proponents of harvest and fire treatments).

of large trees that had been wrongly depleted in the past.[956] The agency trustee would likewise have to show that the removal, rather than retention, of big trees would maximize benefits to the public trust beneficiaries and represent the highest and best use of those trees.[957]

In this vein, there is a marked parting of ways between scientists who see different optimal management approaches for Eastside forests. One group emphasizes the need to continue recovering the inventory of large and old trees existing in forests that had been cut-over during the timber-dominant era.[958] This approach would further the duty of a trustee to continue recovery of a depleted trust account. This scientific block also underscores the multitude of values offered by the big trees in their current state and stresses the climate consequences of cutting such carbon storehouses[959]—all which speaks to the duty to maximize public benefits from the resource.[960] On the other end, a different group of well-known scientists sides with the Forest Service, promoting, in a published commentary, thinning projects that remove shade tolerant trees as a tool to create more fire resilience and to reach "a desired condition of enhanc[ing] the resistance of old shade-intolerant trees that can store carbon over longer periods in the face of a warming climate."[961] In this regard, it remains the fiduciary duty of the Forest Service to use reasonable skill and diligence,[962] which mandates the

956 In 1993, the Eastside Forests Scientific Society Panel provided a review of Eastside forests and recommended protection of large trees for their ecosystem values. *See* MARK G. HENJUM ET AL., INTERIM PROTECTION FOR LATE-SUCCESSIONAL FORESTS, FISHERIES, AND WATERSHEDS (James R. Karr & Ellen W. Chu eds., 1993). In that report, the panel emphasized the depleted stocks of old-growth and late-successional forest. *Id*. at 5 ("Present levels of late-successional old growth on the Eastside fall far below historic levels . . . . Ponderosa pine forests have been especially hard hit by logging. Only 3-5% of the original ponderosa climax old growth remains in the Deschutes . . . and Freemont National Forest[s].").

957 *See supra* Section V.A.3.

958 DellaSala & Baker, *supra* note 945, at 2–4 ("The recovery of these trees is far from complete," and noting that, in Eastside forests, "large tree populations remain at greatly reduced numbers."); *see also* Open Letter, *supra* note 935, at 1922 (emphasizing "ongoing deficit of large trees and the fact that older forests have not yet recovered").

959 Mildrexler et al., *supra* note 126; Open Letter, *supra* note 935; DellaSala & Baker, *supra* note 945.

960 *See supra* Section V.A.3 (duty to maximize benefit to public).

961 James D. Johnston et al., Commentary, *Large Trees Dominate Carbon Storage in Forests East of the Cascade Crest in the United States Pacific Northwest*, 4 FRONTIERS ARTICLE 653774 (2021).

962 *See supra* Section V.B.3 (duty to use reasonable skill and diligence).

agency to both account for these divergent approaches[963] and to specifically delineate its public trust goal of forest management, tying that goal to the scientific studies and ensuring rules to promote the goal—rather than creating gaping discretion that could undermine it. The Scientist's Open Letter charges, "Although removing protections for large trees is highly controversial from a scientific perspective, the Forest Service is rushing forward without adequately analyzing the impacts of the proposal on wildlife habitat, aquatic ecosystems, hydrological cycles and carbon values."[964] Erasing the protection that has been in place for so long without addressing the vacuum of accountability flies in the face of the strict fiduciary care required of a trustee managing public property.

4. Interpretation of the OCLA and BLM's Westside Forest Management

As described in Section II.B.2, BLM's management of Westside Forests has been the subject of intense litigation since adoption of the NFP.[965] A present flashpoint is the WOPR Jr., adopted in 2016. While the plan set aside some ecological reserves for water and wildlife protection, it designated a "harvest land base" in which timber production would reach 205 million board feet per year.[966] The plan allows for 400 miles of new roads, 90,000 acres of clear-cuts in the plan's first decade, and reduces protections for salmon and aquatic habitat—all of which is almost sure to cause substantial impairment to forest, wildlife, and water resources, abrogating the agency's trust duty

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963 The DellaSala and Baker report surmises that the Forest Service instead ignored evidence. *See* DellaSala & Baker, *supra* note 945, at 2 ("The agency omits the vast majority of scientific literature that supports large-tree protections in regions where large tree populations remain at greatly reduced numbers such as the Eastside forests.").

964 Open Letter, *supra* note 935, at 1; s*ee also* Complaint at ¶ 150, Greater Hells Canyon Council v. Wilkes, No. 2:22-cv-00859-HL (D. Or. June 14, 2022) ("The Final EA dismissed an extensive body of research . . . that demonstrated how thinning and particularly the logging of large trees can actually increase fire severity, and how significant the protection of large trees is for maintaining fish and wildlife habitat, riparian health and carbon storage.").

965 After leaving the DOI to manage the O&C Lands "for fifty years with essentially 'unchallenged administrative discretion'" (i.e., from 1937 to 1987), courts moved to interpret the O&C Act starting in the late 1980s. *See* Scott & Brown, *supra* note 134, at 291 (quoting Michael C. Blumm & Jonathan Lovvorn, *The Proposed Transfer of BLM Timber Lands to the State of Oregon: Environmental and Economic Questions*, 32 LAND & WATER L. REV. 353, 363, (1997)).

966 Am. Forest Res. Council v. Hammond, 422 F. Supp. 3d 184, 188 (D.D.C. 2019).

of protection.[967] Moreover, by not even evaluating the forest's carbon storage and the impact clear-cuts would have on climate change, the WOPR Jr. failed to consider how to maximize the value of the forest and use its resources for the "highest public purpose."[968]

In three related opinions in litigation over the WOPR Jr., D.C. federal district court Judge Richard L. Leon crafted a singularly timber-dominant interpretation of the OCLA, finding that BLM was bound to offer timber across all its lands and could not reserve any lands for ecological protection.[969] In his view, the WOPR Jr. violated the OCLA by establishing reserves and by not going far enough to supply timber. That interpretation puts at risk Oregon forests across O&C Lands—lands which hold valuable carbon storage, watershed, and biodiversity resources.

Though Judge Leon stated that he gained his conclusion from the "plain text of the O&C Act," he interpreted that statute to erase key provisions and terms and failed to interpret the act in the context of BLM's public trust obligation.[970] Since Congress is a trustee of public lands (including the O&C Lands), management statutes such as the OCLA must be interpreted consistent with, not contrary to, public trust obligations.[971] Viewed in the context of the public trust, the OCLA presents a paradigm of protection and supports reserves.

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967 *See supra* notes 155–56 (describing the WOPR Jr.). While 85% of old-growth forests are in reserves under the plan, vast loopholes may, according to critics of the plan, effectively allow logging in all but 15% of O&C Land old-growth forests. Overall, the increased logging levels by 37%. Darling, *supra* note 157.

968 *See supra* note 686 and accompanying text (describing duty to maximize benefit to the public and achieve the "highest and best use" for the public beneficiaries).

969 *Hammond*, 422 F. Supp. 3d at 190 ("The 2016 RMPs violate [the OCLA's] mandatory directives by excluding potions of O&C timberland from sustained yield timber harvest."). Judge Leon's rulings were recently reversed by the D.C. Circuit Court of Appeals. Am. Forest Res. Council v. United States, 77 F.4th 787 (D.C. Cir. 2023). For a discussion of Judge Leon's treatment of the WOPR, see Blumm et al., *supra* note 6, at 194–96.

970 *Hammond*, 422 F. Supp. 3d at 187. The very posture of one case was notably out of alignment with the public trust obligation, as it was brought by private timber companies that purchase timber from O&C Lands. Starfire Lumber Company and South Coast Lumber Company alleged that BLM had violated the O&C Act of 1937 by failing to cut enough timber annually. Swanson Grp. Mfg. LLC, v. Bernhardt, 417 F. Supp. 3d 22, 25 (D.D.C. 2019). This came *after* the BLM updated its RMPS on O&C Land in 2016, resulting in much more cutting than what was previously allowed. One core principle of the public trust is to not manage the public's resources for the primary benefit of a private party, yet the framework of the case suggested that the companies expected just that.

971 *See generally* Alexandra B. Klass, *Modern Public Trust Principles: Recognizing Rights and Integrating Standards*, 82 NOTRE DAME L. REV. 699 (2013); William D. Araiza,

In a comprehensive analysis of the OCLA, Scott and Brown make a compelling argument that the OCLA requires the BLM to manage its land for multiple uses (consistent with a forest trust), not simply timber production. Timber is one prominent use,[972] but not the only use of the O&C Lands—and certainly not the dominant use if timber harvest conflicts with other stated values. The statute charges BLM to manage the land for "permanent *forest* production," stating multiple purposes of "providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities."[973] It also sets forth a trust construct by not allowing harvest exceeding "sustained yield."[974] As Scott and Brown note, the Senate and House reports made clear that the OCLA was intended to correct the wrongful resource management of the past, which favored clear-cutting over conservation and community stability, an approach "now believed to be wasteful and destructive of the best social interests of the State and Nation."[975] Bills leading to the new OCLA presented an approach of "conservation and scientific management" for the lands, where instead of destroying the timber assets by "early liquidation," they would be "conserved and perpetuated."[976] The House Report accompanying the bill described the legislation as "establish[ing] a vast, *self-sustaining* timber reservoir for the future,"[977] explaining:

The Public Trust Doctrine as an Interpretive Canon, 45 U.C. DAVIS L. REV. 693 (2012). To the extent a statute conflicts with a constitutional requirement, it is not enforceable: a principle that has bearing in the public trust context. *See* discussion at *supra* note 328 (discussing the constitutional underpinnings of the PTD).

972 The timber production goal of the OCLA is clearly to support economic communities in a stable fashion, which departs from the boom-and-bust cycle of clear-cutting. *See* Scott & Brown, *supra* note 134, at 270–73, 300 ("'[B]oom and bust' cycles are not unusual among natural resources-dependent communities, but the O&C Act was enacted specifically to avoid such fluctuations and to provide socio-economic stability.").

973 43 U.S.C. § 2601 (emphasis added). According to the statute's language, O&C Lands:

> [S]hall be managed . . . for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities.

Id. For a comprehensive examination of the OCLA, see Scott & Brown, *supra* note 134.

974 43 U.S.C. § 2601.

975 Scott & Brown, *supra* note 134, at 275 (quoting S. REP. NO. 75-1231, at 2 (1937)).

976 *Id.* (quoting S. REP. NO. 75-1231, at 2-3 (1937)).

977 H.R. REP. NO. 1119, 75th Cong., 1st Sess. 2 (1937) (emphasis added).

> All land classified as timber in character will continue in Federal ownership and be managed for permanent forest production on what is commonly known as a sustained-yield basis. Under such a plan the amount of timber which may be cut is limited to a volume not exceeding new growth, thereby avoiding depletion of the forest capital. This type of management will make for a more permanent type of community, contribute to the economic stability of local dependent industries, protect watersheds, and aid in regulating streamflow.[978]

Construed in the context of public trust obligations, the Act imposes a clear restraint on timber production: it must not exceed sustained yield, nor may it damage watersheds, recreation or streamflow.[979] Instead, Judge Leon's interpretation took what is a public trust *restraint* on federal managers and turned it inside out, presenting a fixed requirement to supply timber from across all O&C Lands without regard to crucial public trust values such as watershed and wildlife protection.[980] As Blumm and Wigington note in their extensive examination of O&C Lands, 75% of such lands fall within designated surface water protection areas.[981] As a sovereign trustee of water

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978 *Id.* (emphasis added). A dated Ninth Circuit opinion found that, despite this multiple use language, the statute had a timber-dominant management mandate. Headwaters, Inc. v. BLM, 914 F.2d 1174 (9th Cir. 1990). In *Headwaters*, the plaintiffs argued that the O&C Act required the BLM to manage the O&C Lands for multiple uses, including wildlife conservation. The Ninth Circuit held that timber production was the primary objective of the Act, that exempting timber resources to serve as wildlife habitat was inconsistent with the Act, and that "[t]here is no indication that Congress intended 'forest' to mean anything beyond an aggregation of timber resources." *Id.* at 1183. The conclusion squarely contradicts the explicit language in the statute that limited timber harvest so as to protect water resources and other forest components. There was little reasoning in this cursory opinion. The majority simply quoted the act and delivered a conclusionary interpretation that supported the timber goals of the act, while disregarding the express ecological ones.

979 43 U.S.C. § 2601 requires:

> [The lands] shall be managed . . . for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal [*sic*] of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities.

Id. (emphasis added). The Act imposes the sustained-yield restriction again, stating, "Timber sales from a forest unit shall be limited to the productive capacity of such unit and the Secretary is authorized, in his discretion, to reject any bids which may interfere with the sustained-yield management plan of any unit." *Id.*

980 "Every year, BLM is required to sell or offer for sale an amount of timber that is not less than the declared annual sustained yield capacity of the timberland subject to the O&C Act." Swanson Grp. v. Bernhardt, 417 F. Supp. 3d 22, 27 (D.D.C. 2019) (emphasis omitted).

981 Blumm & Wigington, *supra* note 134, at 62 (citing THE NATURE CONSERVANCY & WILD SALMON CTR., ATLAS OF CONSERVATION VALUES ON BUREAU OF LAND MANAGEMENT HOLDINGS IN WESTERN OREGON 8 (2012)).

resources, BLM is not simply at liberty to disregard its fiduciary obligations to protect these watersheds.[982]

The OCLA, by its plain terms, creates two large pockets of management discretion for BLM within which the public trust obligations must govern agency actions. First, BLM is charged with determining which lands, of its O&C holdings, are suitable for timber production.[983] The Act clearly and justifiably assumes that not all lands are suited for timber production; BLM must identify suitable "timberlands."[984] Over the decades, BLM has followed a process of designating various lands for timber production and reserving land for other values.[985] Pursuant to its public trust obligation, BLM must revise its determinations to accord with prudent fiduciary stewardship.[986] In a world of increasing climate chaos that will affect the health of the forest, BLM must create protective reserves to ensure a continuing water supply, support wildlife habitat, and mitigate carbon pollution. Establishing mature and old forest reserves is consonant with this overriding trust obligation and well within the discretion granted by the OCLA.

Second, BLM has the stated duty to set, at its discretion, levels of timber harvest on the timberlands it designates.[987] Here as well, the BLM must revise such levels (known as allowable sale quantity, or

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982 *See* discussion at *supra* Section III.B (explaining that agencies may not abrogate their public trust obligations).

983 *See* 43 U.S.C. § 2601 ("[S]uch portions of the revested [O&C Lands] . . . which have heretofore or may hereafter be *classified as timberlands* . . . shall be managed . . . for permanent forest production." (emphasis added)).

984 *Id.*; *see also supra* note 141.

985 *See In re* BLM Request for Exemption under the Endangered Species Act, FWS Post-Hearing Brief on BLM Exemption Application, Endangered Species Committee, U.S. Department of the Interior, Office of Hearing and Appeals, ESA 91-1, at 50–51 (1991) (explaining process of designating lands available for harvest and noting, "Not all BLM lands are 'available for harvest.' Rather, some may not [be] in order to accommodate multiple uses").

986 *See* Nat'l Audubon Soc'y v. Superior Ct. of Alpine County, 658 P.2d 709, 728 (Cal. 1983) (imposing a "duty of continuing supervision" over the use of water trust resources).

987 *See* 43 U.S.C. § 2601 ("The annual productive capacity for such lands [classified timberlands] shall be determined and declared as promptly as possible."). Judge Leon's rulings acknowledge this discretion as well. *See* Swanson Grp., v. Bernhardt, 417 F.Supp.3d 22, 26 (D.D.C. 2019) (holding that the O&C Act "conveys a clear requirement: *once BLM declares an annual sustained yield capacity*, it must sell that amount [of timber] or so much thereof as can be sold at reasonable prices on a normal market' every year") (quoting Swanson Grp. V. Salazar, 951 F. Supp. 2d 75, 81–82 (D.D.C. 2013) (emphasis added)); *see also id*. At 27 ("Every year, BLM is required to sell or offer for sale an amount of timber that is not less than the *declared annual sustained yield capacity* of the timberland subject to the O&C Act." (emphasis added)).

ASQ) to respond to rapidly changing conditions. In setting such levels, BLM must abide by the precautionary principle of trust management to set a margin of safety, protecting some remaining forest reserves against unknown but potentially catastrophic conditions such as wildfire. Further, it must recover the forest from past, unlawful depletion by setting ASQ low enough to protect remaining mature and old forest and allow forest regrowth to late successional stages. It is well known that BLM's management historically repudiated the trust-conservation approach mandated by the OCLA. In the early 1990s, in the "God Squad" proceedings over the northern spotted owl involving habitat on O&C Lands threatened by forty-four timber sales, experts recounted the liquidation of the trust resource by BLM managers: "BLM's timber lands, once composed mostly of mature and old-growth timber, have been systematically and rapidly converted to intensively managed, ecologically simplified, younger stands with the resultant loss of habitat . . . . Currently, only 15% of the original old-growth remains on BLM's Oregon timber lands."[988] As discussed in Section V.A.5, the public trust principle requires trustees to recover a trust resource that has been depleted.

In their extensive analysis, Blumm and Brown underscore the importance of the O&C Lands in advancing an ecologically sound approach. They conclude that Judge Leon's decisions "put the wildlife and the waters in the region at risk."[989] Without a doubt, a crucial part of the Oregon Forest Trust is at stake in BLM's management of Westside forests.

B. State Lands

1. Management for "Greatest Permanent Value" and "Greatest Benefit"

As discussed above in Section II.C., both Oregon's Board of Forestry Lands and its Common Schools Lands must be respectively managed for the "greatest permanent value" and the "greatest benefit" to the state.[990] In the case of Board of Forestry Lands, there is

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988 *In re* BLM Request for Exemption under the Endangered Species Act, FWS Post-Hearing Brief on BLM Exemption Application, Endangered Species Committee, U.S. Department of the Interior, Office of Hearing and Appeals, ESA 91-1, at 53 (1991); *see also* Blumm & Wigington, *supra* note 134, at 4, 64 (noting "apparent over-harvesting of the lands through the 1980s" and that, in the early 1990s, only 5% of old growth may have remained on the O&C Lands).

989 Blumm et al., *supra* note 6, at 211.

990 *See supra* Section II.C.

regulatory elaboration as to the meaning of greatest permanent value (GPV), which is defined (properly, from the trust perspective) as encompassing elements such as well-functioning and productive habitats, productive soil, clean air and water, and erosion protection.[991] As discussed above in Section II.C.1, the Oregon Court of Appeals appropriately held in *Linn v. State* that the GPV standard did not translate to maximizing revenue from the forests for the counties.[992] For Common Schools Lands, the Oregon Constitution provides that management of these lands for "greatest benefit" must be "consistent with the conservation of this resource under sound techniques of land management."[993] This phraseology encompasses the same elements defined as "greatest permanent value" for Board of Forestry Lands forests (properly functioning and productive habitats, productive soil, etc.).[994] But while the legal standards for managing both sets of lands seem to reflect a public trust paradigm, the Board must ensure that the actual management meets those ideals—which would not be the case if past high logging levels continue.[995] Moreover, management of the Elliott State Research Forest remains yet unsettled, but given the importance of the Elliott to carbon sequestration and other ecological values, the prospect of considerable timber harvest on a third of its lands (with no compelling nonmonetary purpose other than research) contravenes the principle of maximizing the value of the trust asset to the public.[996]

It should be noted that, with regard to Oregon's Common Schools Lands, the management framework's appropriate legal focus on managing for overall ecological value contrasts with that of numerous western states where state land managers confront an obligation that, as interpreted by courts, "requires them to maximize revenues from the use of those lands."[997] This revenue directive drives a commodity-only approach to western states land management outside Oregon, resulting in depletion of the ecological trust that the public trust

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991 OR. ADMIN. R. 629-035-0020(1)(a)–(f).

992 *See supra* note 183 and accompanying text.

993 OR. CONST. art. VIII, § 5(2).

994 The language of both mirrors the trust obligation to protect resources. *See* discussion *supra* at Section V.A.1.

995 Kerr, *supra* note 786 ("Logging continued at very high levels on state forests, and public concerns rose.").

996 *See* discussion at *supra* Section V.A.3.

997 Sean E. O'Day, *School Trust Lands: The Land Manager's Dilemma Between Educational Funding and Environmental Conservation, a Hobson's Choice?*, 8 N.Y.U. ENV'T L.J. 163, 165 (1999) (citing "[t]welve different state and federal courts").

principle is designed to secure. A 1992 attorney general opinion had imposed that interpretation on Oregon as well,[998] however a key Oregon Supreme Court ruling in 2019, *Cascadia Wildlands v. Oregon Dept. of State Lands*, rejected the interpretation. The court stated it was "not persuaded that the State Land Board's core function is to use the common school lands to generate the greatest net profit possible for the state."[999] Thus, the Oregon approach is more consistent with the public trust—which, as an attribute of sovereignty, forms an antecedent obligation predating any constitution or statutes and structurally underlies any other specific trust language such as that in school lands grants. While a full discussion is beyond the scope of this Article, other states should take note of Oregon's example and harmonize their revenue objectives with the public trust imperative under which all public lands are held. Even within the narrower paradigm of revenue maximization embraced by many western states other than Oregon, a financial solution that both maximizes revenue and accomplishes conservation may be within reach. Recent economic analysis sheds doubt on the dated assumption that logging a forest will maximize revenue.[1000] Amidst a planetary climate emergency, entities increasingly pay timberland owners to protect trees to pull down carbon from the atmosphere.[1001] This new carbon forest revenue stream, particularly combined with other compensation for co-benefits such as recreation and drinking water protection, may allow state trustees to meet a legal duty to maximize revenue while protecting public trust assets.[1002]

2. Western Forests Habitat Conservation Plan

As noted in Section II.C.3, the Oregon Department of Forestry has developed an HCP to form the basis of an ITP application for forestry

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998 *See generally* 46 Op. Or. Att'y Gen. 468 (1992).

999 Cascadia Wildlands v. Or. Dep't of State Lands, 452 P.3d 938, 946 (Or. 2019).

1000 *See* Niemi, *supra* note 691, at 12 (summarizing leading study commissioned by the UK government which shows that "investments in conservation and restoration typically yield a rate of return greater than 19 percent, almost four times greater than the rate of return on timber production and other forms of resource exploitation").

1001 *See, e.g.*, Kate Anderson, *Yes, Long Rotations Can Yield Real Climate Gains for Cascadia*, SIGHTLINE INST. (Mar. 17, 2022, 11:30 AM), https://www.sightline.org/2022/03/17/yes-long-rotations-can-yield-real-climate-gains-for-cascadia/ [https://perma.cc/KUX6-WUJT].

1002 *See* Kerr, *supra* note 786 (suggesting state land managers explore financial return from managing for carbon storage and noting, "The price of carbon is rising. At some point, perhaps soon, the net present value (NPV) of not logging a forest might well exceed the NPV of logging a forest.").

activities affecting identified ESA-listed species across its western state forestlands. The Western Forests HCP suffers structural deficiencies shared by most HCPs. Accordingly, these replicate in the context of Oregon's private lands, which are the subject of the Private Timber Accord and a contemplated HCP for ten million acres of private land. The decades-long duration of most HCPs means that harmful activities permitted by an ITP will be locked in, beyond the sovereign's ability to easily modify, despite almost certain radical change in future environmental conditions.[1003] With climate crisis bearing down on landscapes everywhere, the sovereign trustees need to maintain agility more than ever to control harmful activities in response to emerging science. A locked-in set of harmful activities that may make sense in 2023 may make no sense in 2093—the seventy-year duration of the proposed Western Forests HCP. By essentially shackling the sovereign's ability to control harmful activities, HCPs seemingly amount to an illegitimate abdication of fiduciary responsibility in contravention of the public trust.[1004] Moreover, federal agencies charged with enforcing the ESA face notorious political pressure to not enforce, so the HCPs may not even achieve their intended outcomes, however inadequate.[1005]

Apart from these structural problems general to all HCPs, the Western Forests HCP has specific drawbacks. As a species-driven measure, it addresses only a handful of identified target species and falls far short of the holistic protection of forest ecology that the trust would require. Moreover, the HCP leaves over half of the state-owned acreage open for logging and makes no mention of the resulting

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1003 Most HCPs contain "no surprises" assurances whereby if unforeseen circumstances arise, the Service will not seek additional land protection or restrictions without consent from the permittee. *See* Habitat Conservation Plans and "No Surprises Assurances": Frequently Asked Questions, U.S. FISH & WILDLIFE SERV., https://www.fws.gov/node/265320#no-surprises-assurances [https://perma.cc/CU2W-6AT9].

1004 Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 453 (1892) ("The state can no more abdicate its trust over property in which the whole people are interested, . . . than it can its police powers in the administration of government and the preservation of the peace.").

1005 The enforcement problem pervades the regulatory system and is not unique to HCPs. *See* WOOD, *supra* note 22, at 87. A Union of Concerned Scientists survey found 24% of scientists in the NMFS and 20% of scientists in the USFWS reported being directed to "'inappropriately exclude or alter technical information' from scientific documents." *Id.* at 88. For a discussion of the "politics of discretion" and how "ongoing, systematic enforcement failures create a regulatory milieu where tolerated lawlessness becomes the norm," see *id.* at 68–81 (also discussing the "portals" of discretion "through which politics or inappropriate bias can and often does enter into the [regulatory] process," and how the third and final "enforcement" portal provides industry actors yet another opportunity to derail the environmental regulatory regime).

carbon pollution to the atmosphere. As the spokesperson for the Oregon Department of Forestry readily acknowledged, the HCP represents a "middle of the road approach,"[1006] striking a balance between conservation and industry objectives. From the political perspective, such a compromise may be quite reasonable, but political appeal has no bearing on whether the resulting protection satisfies the public trust's standard against "substantial impairment" of trust resources.

C. Private Lands

As noted in earlier Parts, a large portion of the Oregon Forest Trust (ten million acres) exists on timberlands that are privately held, and a colossal amount of ecological damage flows from the lands that are owned by large absentee corporations engaged in intense industrial forestry.[1007] As to these private lands, the state's trust obligation operates through the medium of regulation, which must constantly undergo assessment for whether it adequately carries out the fiduciary duties. While the discussion below highlights and evaluates the significant regulatory issues currently emerging in the realm of private forestry, these first must be contextualized in the framework of private property rights, building on the background discussion in Section III.E. above.

1. Private Property Rights Framework

Private property owners, as previously explained, do not have unfettered rights to do whatever they please on their property. Property rights are a type of bargain between the sovereign and the individual because property is a state-created legal institution. The institution of private property must continually recalibrate to serve societal ends and prevent harm that comes in newly recognized forms. These legal parameters converge on a vexing question pertaining to industrial

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[1006] Stacey Newman Weldon, *Oregon Forests Habitat Conservation Plan Released for Comment*, CORVALLIS ADVOCATE (Mar. 31, 2022), https://www.corvallisadvocate.com/2022/oregon-forests-habitat-conservation-plan-released-for-comment/ [https://perma.cc/DN5U-XL9W].

[1007] The distinction between those large woodland owners (who hold approximately seven million acres) and small woodland owners (who hold approximately three million acres) is notable, both for descriptive purposes and for legal analysis. *See supra* notes 220–221 and accompanying text. The smaller owners tend to practice sustainable forestry and generally do not "substantially impair" the trust assets located on their lands. *See supra* Section V.A.1 (describing substantial impairment standard that defines the duty of protection). Some of these owners might present a model for future forestry across all private lands.

timberlands: what rights do those large private owners hold? The answer must account for the grave stakes Oregonians have in the timber practices on the forest estate that includes private industrial timber holdings. For many communities, their drinking water supplies exist in watersheds owned largely by timber corporations.[1008] Significant fish and wildlife species depend on habitat that exists on those lands, and the planet's atmosphere requires the regulating force of large trees that can grow on such lands. Communities may face threats to life and property from a denuded slope on a hill above that could slide, or a wildfire fueled more intensely by an adjacent tree plantation.

Clearly, to abate harm to public trust resources (drinking water supplies, fish and wildlife habitat, navigable waters and tributaries, and the climate system),[1009] industrial harvest practices must progress from the current destructive paradigm of intensive forestry—with its massive clear-cuts, chemical spraying, tree plantations, and forty-year rotations—to a new practice of sustainable forestry more along the lines of what the smaller woodland owners have practiced, some for generations. The regulatory agencies (primarily the Oregon Department of Forestry) hold an inescapable public trust duty to protect crucial resources through regulation of private property.[1010] Large timberland owners may demand compensation for such limitations within the regulatory takings framework, but as noted earlier, restrictions that abate harm to public trust resources do not generally trigger a compensation requirement. A right to destroy public trust resources, whether located on or off private property, is not part of the title that owners acquire.[1011]

[1008] *See supra* notes 602–08.

[1009] For purposes of this analysis, public trust resources are broadly construed to include resources that many other states have brought within the trust ambit. *See generally* discussion at *supra* Part IV.

[1010] Such agencies are also charged with protecting public welfare pursuant to the police power. Both attributes of sovereignty require regulation to transform the harmful practices of many private industrial timber owners.

[1011] The question of compensation is analyzed through a regulatory takings framework. Generally speaking, the public trust provides a defense to a regulatory takings claim against a government action designed to protect the trust asset. *See supra* note 429 and accompanying text; Esplanade Props. v. City of Seattle, 307 F.3d 978 (9th Cir. 2002); Stevens v. City of Cannon Beach, 854 P.2d 449 (Or. 1993). Apart from that, the *Penn Central* regulatory takings test applies, balancing three factors: the economic impact of the regulation on the claimant, the extent to which the regulation has interfered with distinct investment backed expectations, and the character of the governmental action (i.e., a regulation that prevents harm to society is less likely to be found a taking than a regulation conferring a benefit on society). Penn Cent. Transp. Co. v. N.Y.C., 438 U.S. 104, 124

Repurposing such lands for long-term or perpetual carbon storage is, conceptually, a different—and largely unexplored—matter that warrants urgent attention and nuanced regulatory takings analysis. On one hand, clear-cutting and deforestation is now widely recognized as a modern form of harmful pollution, as it sends an amount of carbon dioxide back into the atmosphere.[1012] Abating carbon pollution requires leaving the forests standing just as it requires leaving fossil fuels in the ground. But beyond preventing atmospheric pollution—conceptually, a harm that society should not have to compensate companies for—there is a public benefit component to leaving trees to grow for centuries because they serve as Nature's engines for the cleanup of legacy carbon in the sky from over a century of society's carbon pollution. In theory, carbon accountants could assess modern forestry harvest rotations to delineate their polluting/damaging component from their carbon storage/benefit component. The endeavor obviously requires a line-drawing exercise to place activities on one or the other side of the takings ledger, and as Justice Scalia famously said in the regulatory takings case *Lucas v. South Carolina Coastal Council*, "harm[] and benefit . . . is in the eye of the beholder."[1013] Nevertheless, carbon forestry analysis has progressed to the point where standard industry rotations are widely deemed harmfully short.[1014] A forced regulatory rotation well beyond current industry practices arguably should not require compensation if the analysis characterizes shorter rotations as polluting the atmosphere and otherwise ecologically

(1978). Measure 49, discussed below, provides compensation to timberland owners well beyond what the U.S. Constitution requires, but is still, in theory, subject to the PTD defense against takings claims. *See infra*, Section VI.C.5. The takings analysis is context-specific and well beyond the scope of this Article. Ultimately, society may avoid the risk and cost of litigation by creating a negotiated compensation scheme.

1012 Hudiburg et al., *supra* note 635, at 4 (describing carbon emissions from forest harvest: "In just over 100 years, Oregon has removed the equivalent of all live trees in the state's Coast Range forests, and returned 65% to the atmosphere and transferred 16% to landfills." The study further reports that, "Forest harvest-related emissions have averaged 107 [million megatons of CO_2 equivalents] annually from 2001 to 2016."); *see also* Law et al., *supra* note 57; *c.f.* Setzer & Winter de Carvalho, *supra* note 525, at 197 (describing a lawsuit against Brazilian government for carbon pollution caused by deforestation and noting that logging in the Brazilian Amazon was responsible for 25.7% of the country's total annual carbon emissions in 2018).

1013 Writing for the Court, Justice Scalia wrote that "[t]he transition from our early focus on control of 'noxious' uses to our contemporary understanding of the broad realm within which government may regulate without compensation was an easy one, since the distinction between 'harm-preventing' and 'benefit-conferring' regulation is often in the eye of the beholder." Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1024 (1992).

1014 *See supra* notes 731–33 and accompanying text; *see also* discussion *supra* Section I.B.

harmful. Beyond that temporal line, compensation may be more justified as the landowner is said to provide a benefit of carbon storage to society as a whole.

No matter the outcome of regulatory takings analysis, it is beyond dispute that many of Oregon's forests (public or private) have their highest value now in carbon storage. Moving private industrial forestry into a new stewardship paradigm is a challenge that urgently befalls the sovereign trustees charged with protecting Oregon's vital resources. Arriving at fair compensation schemes that do not reward corporations for averted harm they never had the right to impose on communities in the first place must be a core aim. But if the past is any indication, Oregon forest regulators and legislators operating in a political reality shaped by the timber industry will be pressured to do just that.

The following discussion briefly touches upon some of the main features of the private forest regulatory scheme (previously described in Section II.D) to evaluate its alignment with public trust principles. In so doing, it acknowledges that there have been some strides in the private arena. The legislature adopted SB 1602, which set buffers on spraying across private lands, and it endorsed the provisions of the PFA geared to protecting salmon. However impressive these developments might be when assessed against a history of remarkably lax state oversight, they still represent a product of negotiation within a political framework that is heavily dominated by big timber interests. From the public trust perspective, outcomes that are a product of negotiation—while certainly a welcome relief to exhausted advocates in Oregon's acrimonious political climate—must nevertheless be assessed for whether they protect the inalienable rights of present and future generations to the natural commonwealth needed to support their needs in perpetuity. Seemingly "win-win" outcomes from the political arena must measure up against fiduciary standards incumbent on the state's public trustees, as discussed above.[1015] However applauded a compromise is today, if it does not adequately assure the perpetuation of the full *res* for the future, it violates the trust.

2. Forest Practices Act

As explained in Section II.D.2 above, Oregon's FPA presently allows for clear-cutting of over 100 acres at a time, close to streams even on steep slopes, and permits considerable road-building projects. These practices threaten "substantial impairment" of water, fisheries,

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1015 *See supra* Part V.

wildlife, atmosphere, and forest trust assets; clear-cutting also commits waste to the trust by utterly destroying the forest ecology that supports the resources future generations rightfully have claim to as beneficiaries of the public trust. This lax regulatory scheme appears calculated to serve the primary purposes of private timber companies rather than the public beneficiaries in further violation of the trust. Moreover, questionable enforcement and alleged bias on the part of state forestry officials[1016]—if borne out—legally diverges from the vigilant oversight required of government trustees of valuable ecological wealth. Finally, by not reforming regulations in the face of increased stream temperatures, devastating wildfires, and sensitive habitat erosion, the FPA typifies a permissive approach that contravenes the duty of active trust supervision.[1017]

3. The Private Forest Accord (and the Contemplated Future Private Lands HCP and ITP Under the ESA)

As Section II.D.4 explained, in early March 2022 the Oregon legislature signed into law much of the PFA and directed the Oregon Board of Forestry to adopt updates to the FPA as a step toward gaining an HCP for the ten million acres of private timber land.[1018] While lauded as a landmark political achievement for outgoing governor Kate Brown who praised the Accord as "a perfect example of the Oregon Way—coming together to find common ground, to the mutual benefit of us all"—the compromise reform fails to bring the flawed FPA into alignment with fiduciary obligations of state trustees.[1019] Aside from the enhanced protections for riparian areas to benefit a set of ESA-listed species, the PFA does nothing to transform harvest practices. Clear-cutting will still continue, posing the risk of substantial impairment to an array of trust assets as indicated above. Notably, the FPA does nothing to directly protect the many non-riparian species that rely on forest habitat, nor does it arrest the carbon pollution to the atmosphere caused by harvest. It likewise fails to maximize the public value of mature and old trees for capturing carbon.[1020]

1016 *See* Schick, *supra* note 267.

1017 *See supra* note Section III.C.2.

1018 *See* PRIVATE FOREST ACCORD, *supra* note 282, at 3.

1019 Bradley W. Parks, *Deal Sets Course for Overhaul of Private Forest Management in Oregon*, OR. PUB. BROAD. (Oct. 30, 2021, 2:07 PM), https://www.opb.org/article/2021/10/30/private-forest-accord-oregon/ [https://perma.cc/FY9C-FRU9].

1020 *See supra* Section V.A.3.

As to the riparian protections, the contemplated HCP will lock in commitments for several decades (a half-century for fish species and twenty-five years for amphibian species), an approach utterly at odds with the duty of trustees to engage in prudent management and active, ongoing supervision.[1021] While long periods of regulatory certainty favor business interests,[1022] they bind the trustees' ability to respond to the certain change that planetary heating and climate disruption will bring. The PFA rectifies some of the more glaring deficiencies of the FPA, but it does not accomplish the paradigm shift from industrial forest destruction to forest protection and recovery that the public trust requires.

4. SB 1602

As noted above in Section II.D.3, SB 1602 represents a significant achievement in pesticide regulation. It will undoubtedly go far in protecting some communities against immediate exposure to toxins dispersed through aerial spraying. However, from the public trust perspective, it does not suffice to protect the water resources—undeniably trust resources—that are part of any watershed receiving chemical spray. The act creates buffer zones along riparian areas, but it fails to ban the dispersal of toxins altogether. Once such chemicals blanket the lands, hydrological processes inevitably move them toward receiving waterways. The issue is whether, despite the negotiated protections that admittedly represent clear political victories, there is nevertheless "substantial impairment" in the form of contamination to public trust resources including fisheries, wildlife, and water sources.

5. Measure 49

As explained in Section II.D.5, Oregon's Measure 49 allows compensation for regulations that restrict forest activities. Within the trust framework, Measure 49 represents a fairly obvious contravention of sovereign duty. If the regulating entity (the state or county) lacks the funds to pay for the decrease in market value caused by the regulation, it typically will waive the restriction to avoid compensation. This behavior, if opening public trust assets to "substantial impairment," violates the sovereign's fiduciary duty to protect public trust assets. As the *Geer* Court stated, "[I]t is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its

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1021 *See supra* Section III.C.2.

1022 *See* PRIVATE FOREST ACCORD, *supra* note 282, at 6.

beneficial use in the future to the people of the state."[1023] Apart from the public trust, one commentator suggests that Measure 49's compensation requirement may be limited by the constitutional reserved powers doctrine, a principle that forbids a state from "contracting away any of its essential sovereign powers."[1024] Measure 49 has never been evaluated against the public trust or reserved powers framework, and such analysis is long overdue.

VII
PILLAR REFORMS FOR LAUNCHING A NEW ERA

As a federal judge once said with respect to a failing regulatory scheme in the Pacific Northwest—the ESA and agency management of imperiled salmon throughout the Columbia River Basin—the whole system "cries out for a major overhaul."[1025] The same is true of forestry management and regulation. In a probing look at Oregon forestry, Governor John Kitzhaber reflected on the complexity and changing global forces bearing down on the forest context. He noted that the forestry institutions, formed for a different era, may lack the capacity and agility to address emerging challenges such as corporate reconfiguration, climate crisis (with extreme wildfires), and technology changes.[1026] Reforms have been, and will continue to be, proposed by community groups, advocacy organizations, and citizen beneficiaries of the public trust, but these proposed reforms all proceed through an informal, often unstated, social and political viability "filter." Many will be discarded at the outset as nonstarters in a political environment still dominated by powerful timber interests, even if they make increasing sense given our unprecedented climate emergency and biodiversity crisis.

The purpose of this Article has been to change the dialogue and assumptions surrounding the forest debate by explaining the public's inalienable trust rights in forests and the corollary resources they support. Evaluated against intensifying public ecological needs and grounded in constitutional expectations, some approaches presumed impossible in a political frame demand serious attention within the public trust frame. As climate chaos profoundly disrupts society's

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1023 Geer v. Connecticut, 161 U.S. 519, 534 (1896).

1024 Blodgett, *supra* note 287, at 278.

1025 Idaho Dep't of Fish & Game v. Nat'l Marine Fisheries Serv., 850 F. Supp. 886, 900 (D. Or. 1994).

1026 Kitzhaber, *supra* note 240, at 1–2.

expectations and basic security, new justifications exist for conserving irreplaceable resources that remain crucial to human survival and well-being. Industry's profit expectations, long propped up by a dominant commodity frame, must now fall sway to a new reality born in part from industry's own past exploits.

Distilling the public trust principle, this Article introduced a fiduciary paradigm to management across the Oregon Forest Trust. Key to that paradigm is a shift in management focus from commodity extraction to forest commonwealth stewardship that situates economic opportunity within the boundaries of ecological health and recovery—economics as a subset of ecology. Such stewardship aims to maximize the co-benefits of carbon sequestration, drinking water protection, biodiversity support, food supply, and recreational opportunity. The broadscale commodification of forests for timber is now too ecologically naïve a policy for our era, as it fails to recognize the imperative of leaving forests standing to absorb carbon and support vital public interests. With wildfire consuming so many forestlands, those remaining gain a premium value. While timber supply remains, unequivocally, one important societal interest, the foregone conclusion of "mills need supply" has become far too simplistic and generic a justification for sweeping harvest decisions in this world of converging ecological and economic scarcity. Instead, harvest decisions require probing and nuanced analysis that examines which forests are most carbon dense, which forests need thinning to restore health after suppressed fire regimes, and which forests provide public water supplies and significant biodiversity.

This Part highlights ten conceptual "pillars" pointing toward a new forestry model that better aligns with government's trust obligations. Several have been proposed by scientists or forest advocacy groups. Clearly, there are no easy solutions or obvious choices in a world marked by climate danger, species extinctions, drought, and mega-fires. Zero-sum solutions are far more inevitable now than decades ago when ecology was more intact and afforded room for flexible outcomes. The time-tested adage, *you can't have your cake and eat it too*, bodes difficulty for solutions that seek to both please the timber industry and secure public ecological needs. Reform proposals must fit the context, weighing drawbacks as well as positive aspects, and, as Governor John Kitzhaber wrote in his insightful report, there is a need to "enlarge the solution space."[1027]

[1027] *Id.* at 9.

A. Establishing Broad Forest Reserves and Protecting Mature and Old Trees

As noted in prior Sections of this Article, carbon drawdown advanced through forest conservation is considered by some leading scientists to be the "lowest cost climate mitigation option."[1028] But not all forests are created equal in terms of their capacity to draw down and store carbon. As explained earlier in this Article, Oregon's temperate forests provide some of the most powerful natural engines of carbon drawdown in the world, yet only 10% of Oregon forests are protected at the highest levels.[1029] Just as there is an urgent need to protect Amazonian tropical forests for their role in the Earth's carbon cycle, there is an equally urgent need to protect North America's "Amazon." Doing so would also provide benefits for clean drinking water and biodiversity, maximizing the public value of this part of the forest endowment.

In 2022, a leading team of scientists offered a framework for creating forest reserves across Western lands based on their value for carbon storage and biodiversity; it also accounted for their resistance from fire (which affects the durability of carbon storage).[1030] The team identified acreage presently available to be protected at the highest levels.[1031] These reserves would also count toward meeting the federally announced ambition of "30X30" to address the biodiversity crisis—protecting 30% of lands and 30% of waters by 2030.[1032] A subsequent study offered a framework for identifying, at higher resolution, high priority forests in Oregon for carbon storage and biodiversity.[1033] Such specially mapped areas establish a robust foundation for legally protected reserve proposals in Oregon. Without a doubt, any such proposal will stir opposition from timber interests which reject further constraints to harvest, but just as a broad national movement now calls for leaving fossil fuels "in the ground" as a response to the climate emergency[1034]—despite weighty economic consequences for fossil

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1028 Law et al., *supra* note 42, at 7.

1029 Law et al., *supra* note 195, at 1 (noting that Oregon's temperate forests "are among those with the highest carbon densities in the world").

1030 Law et al., *supra* note 78, at 8–11; *see also* Law et al., *supra* note 42.

1031 Law et al., *supra* note 78, at 10–11.

1032 *Id.* at 10.

1033 Law et al., *supra* note 195.

1034 Jeff Brady, *'Keep It in the Ground' Activists Optimistic Despite Oil Boom*, NPR (Mar. 16, 2018), https://www.npr.org/2018/03/16/589908135/keep-it-in-the-ground-activists-optimistic-despite-oil-boom [https://perma.cc/W84L-5WGP].

fuel corporations—so may a parallel movement demand that certain high-priority forests be left standing "in the ground."

The reserve approach, however, is not without dilemmas. For one, the mere creation of legal reserves implies that everything outside a reserve is subject to business-as-usual harvest. Because all forests are valuable and require ecological stewardship, care must be taken to secure prudent fiduciary management of the forests outside reserves. Another dilemma involves the design of reserves and whether they should be fixed with static boundaries (as are traditional reserves) or be more adaptable to changing conditions. Professor Blumm and Susan Jane Brown suggest that fixed reserves may be suitable to anchor large blocks of interior forest that provide present species habitat but "may not be the best strategy to preserve biodiversity and respond to a changing climate where fire is more prevalent on much of the landscape."[1035] As an alternative in these more fire-prone areas, they offer the idea of "an iterative or flexible terrestrial reserve system."[1036] There could be, for example, a reserve system that "maintain[s] essential . . . habitat features, but also allows restoration forestry, wildfire risk reduction, and maintenance treatments (including prescribed fire)."[1037] Blumm and Brown also introduce a "hybrid" reserve strategy for fire-prone areas that protects in reserve status those currently functional, integral habitat areas that are relatively less susceptible to near-term fire ("fire refugia"), while bringing exterior, unreserved areas to a condition of restored status; as the reserves burn, they may be moved to unreserved status designated for restoration, and the exterior (restored) areas may become the new reserves.[1038] The key prerequisite to such a flexible reserve approach is that the management latitude must be strictly geared to furthering the public's interest in compliance with fiduciary duties and not manipulated to serve political ends in contravention of the public's interest. To that end, it remains unclear how the public could be equipped to monitor this fluctuating approach.

1035 Blumm et al., *supra* note 6, at 203.

1036 *Id.*

1037 *Id.* Since their article focuses on the Northwest Forest Plan, which largely emphasizes spotted owl habitat, Blumm and Brown specify that the habitat features should track the recovery plan for the northern spotted owl, but the flexible reserve approach they advocate could also have a much broader habitat focus.

1038 *See id.* at 204 ("As reserved areas experience wildfire over time, and as unreserved lands are restored to a future range of variability, unreserved lands would be newly designated as reserves and fire-affected reserves would be returned to an unreserved status and managed for ecological integrity.").

Apart from the reserve proposals, the protection of mature and old trees has become a perpetual theme in forest reform. Because older trees have gained carbon storage and provide a multitude of ecological benefits, a leading forestry book remarks that their protection is among the "low hanging fruit of the forest/climate discussion."[1039] If a reserve approach takes hold, it would presumably protect mature and old trees from commercial pressures within reserve boundaries, but older groves outside the boundaries warrant protection as well. President Biden's Executive Order on Strengthening the Nation's Forests, Communities, and Local Economies launches such an approach by calling for an inventory and conservation strategy for older forests on federal land.[1040] Oregon should follow suit by protecting mature and old trees on its state forests, including within the recently established Elliott State Research Forest, which was highlighted by scientists as containing a "[h]igh priority" area for carbon and biodiversity.[1041] Notably, however, protective proposals should come accompanied with a moratorium on harvest of older trees to prevent a run on the resource while the policy is being considered and developed, as the greatest pressure on a natural resource is often during that window of time between when a protective measure is announced for consideration and the time it becomes final—in other words, the last window of opportunity to exploit the resource.

B. Extending Timber Rotations on Industrial Lands

On lands that remain in industrial ownership, the strategy of longer timber rotations may yield significant carbon storage and accrue ecological benefits for the extended period of time during which the trees remain standing. Presently, industrial owners typically harvest their plantations at forty years—a timeframe largely calibrated to the pressure to provide returns on investments.[1042] The nonprofit research group Sightline has explored the strategy of extending rotations, finding a dramatic carbon storage increase if the harvest timeframe is

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1039 FRANKLIN ET AL., *supra* note 256, at 433.

1040 *See supra* note 915 and accompanying text (discussing forest prioritization).

1041 *See* Oregon State University College of Forestry, *supra* note 731; *see also* discussion at *supra* Section V.A.3.b.

1042 Anderson, *supra* note 1001 (contrasting "long-rotation forestry" of 80 year cycles with "typical 40-year cycles"); Kate Anderson, *Why Do We Choose Short Rotation Forestry Over Carbon Storage, Timber Supply, and Forest Health?* SIGHTLINE INST. (May 26, 2022), https://www.sightline.org/2022/05/26/why-do-we-choose-short-rotation-forestry-over-carbon-storage-timber-supply-and-forest-health/ [https://perma.cc/F6A6-L7ZF].

stretched from the standard forty-year rotation to an eighty-year rotation.[1043] Moreover, such extended rotations will yield more timber off the same land.[1044]

Of course, the obvious concern with this strategy is that it may simply delay the inevitable, for at the end of the rotation when the trees are cut, they emit carbon dioxide to the atmosphere, no longer continue to store carbon, and cease their ecological benefits. In theory, the additional gain in timber volume during the rotation could justify a smaller harvest footprint, but industrial practices of clear-cut and chemical spray, followed by a new tree plantation, would presumably persist (though perhaps on a smaller land area). In short, the extended rotation strategy does not change the destructive practices of industrial forestry.

One way to approach the matter may be to secure a "sequestration bridge" by extending harvest rotations in increments of forty years during which time market assumptions, ecological dynamics, and societal expectations may well change. Ecological conditions alone may wipe out plantations (through wildfire) or cause some to wither from drought. Almost certainly, soaring risks associated with climate disruption will depress the value of timberland, perhaps opening opportunities for land purchase that could solidify perpetual ecological management (explored in Section VII.G, below). The immediate benefit of extended rotations is to defer the severe environmental costs of harvest and to preserve the future opportunity of securing forest carbon storehouses.

As the Sightline research makes clear, however, extended rotations bring forth a host of practical problems, a primary one being financing.[1045] While a companion report offers several creative approaches to financing,[1046] it bears emphasis that a voluntary arrangement is only one tool for accomplishing longer rotations. Win-

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1043 Anderson, *supra* note 1001; *see also* Law et al., *supra* note 78, at 3.

1044 *See* Anderson, *supra* note 1001 (describing a study by Northwest Natural Resource Group showing that doubling the rotation age increased timber production by 52%); *id.* (allowing trees to reach "biological maximum growth" at around eighty years, as opposed to current practice which allows trees to reach only "maximum annual growth" at around forty years, results in larger timber yield over time: "The bottom line: Regardless of a particular forest's growth curve, the principle of long rotation forestry remains the same. Growing a forest closer to its biological growth maximum produces more timber and stores more carbon.").

1045 *See* Anderson, *supra* note 1042. Other barriers concern markets and technology. *Id.*

1046 Kate Anderson, *Seven Ways to Pay for Long Rotations*, SIGHTLINE (Sept. 12, 2022), https://www.sightline.org/2022/09/12/seven-ways-to-pay-for-long-rotations/ [https://perma.cc/ZV2G-ZVCB].

win market solutions are appealing, particularly in the wake of pitched timber battles that have long deadlocked the state, but timber practices also land squarely in the regulatory realm. Oregon's FPA, notoriously lax in regulating private lands forestry, could—if amended—force longer rotations. In assessing the fair burden to place on private industrial timberland owners (central to any regulatory takings challenge), the question of rotation length cannot be viewed in isolation from the broader practices plaguing these industrial forestlands. Water pollution, damaged habitat, a possible role in aggravating wildfire spread, and potential liabilities from past practices, if considered integrally with the rotation methods, may greatly change the overall equation of how private industrial timber owners may expect to operate in the future.[1047] While outcomes remain unclear, it seems inevitable that government must redraw the lines of private forest management prerogatives. In doing so, great care must be taken to couple any forestry reform with continued land use protections that (per Oregon's land use scheme) secure forestland from development pressures.[1048] A strategy of longer rotations will be of no use if the industrial owner sells to a developer who tries to gain exemptions from land use restrictions.

C. Protecting Drinking Watersheds

Industrial practices of aerial spraying and clear-cutting on forestlands pose a persistent menace to local communities that rely on such watersheds for their drinking water sources. The recently passed legislation that creates buffers along streams, SB 1602, falls far short of protecting the entire watersheds from chemical dispersal. And while the PFA establishes protection of some riparian areas, it is geared toward species protection and fails to prevent clear-cutting upslope that can damage water supplies.

In view of the irreplaceable value of drinking water sources—sources that likely will become increasingly scarce as temperatures rise from climate disruption—protection of the watershed as a whole becomes imperative and warranted by public trust analysis. Community groups along Oregon's coast now advocate, with good reason, for a full ban on aerial spraying and logging in watersheds that

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[1047] Measure 49 is an impediment to new regulations due to its compensation requirement, but it has never been analyzed for its compliance with the public trust or reserved powers doctrine. *See supra*, Part II.D.5 (discussing Measure 49).

[1048] *See* Kitzhaber, *supra* note 240, at 2 ("We should not underestimate the importance that our land use planning system has played in maintaining a stable forest base.").

provide drinking water supplies to towns.[1049] Indeed, aerial chemical spraying has been banned across Oregon's federal forest lands for decades.[1050] In the Bull Run watershed, which supplies the source of drinking water for the City of Portland, no logging is permitted due to a special management unit designation by Congress.[1051] Similar measures are long overdue in the rest of Oregon's forested watersheds—private or public—that supply community drinking water.

D. Activating Ecological Community Forestry

While the commodity frame has propelled destructive forest practices across vast forestlands in Oregon, a new paradigm of "ecological forest management" offers an approach more consistent with a commonwealth frame, designed to move forests toward ecological balance and recovery and supporting their many values for water supply and species habitat while yielding timber products in the process. In their recent book forging this approach, leading forest ecologists Jerry F. Franklin, K. Norman Johnson, and Debora L. Johnson deal comprehensively with the interactions of science, uncertainty, climate disruption, market factors, regulatory regimes, and planning constructs.[1052] Impressive in both its breadth and detail, the model holds guiding principles that can be refined and applied to unique circumstances. While it may conflict with other approaches that also emerge from the commonwealth paradigm (such as a no-harvest reserve approach), the challenge will be to identify the most prudent fiduciary management course of action given the context, which varies

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1049 That is the policy position of the North Coast Communities for Water Protection, which has an online petition to protect watersheds. *See* Petition: Stop Clearcutting, Slash Burns, and Pesticide Sprays Near Drinking Water Sources on the Oregon Coast, https://petitions.sumofus.org/petitions/stop-logging-and-pesticide-spraying-near-drinking-water-sources-on-the-or-coast [https://perma.cc/E2FA-YRQC]. Moving in the opposite direction, the Forest Service proposed a harvest (Flat Country Project) of over two thousand acres of old growth and mature forest in the McKenzie River watershed that supplies Eugene, Oregon, with its water supply. *See* Press Release: Over 100 "Kayactivists" and Community Members Protest Old Growth Logging, CASCADIA WILDLANDS (Oct. 8, 2022), https://www.cascwild.org/press-release-over-100-kayaktivists-and-community-members-protest-old-growth-logging/ [https://perma.cc/9FUE-UHMR]. The Forest Service put the proposal on hold for further consideration after enormous public outcry. *See* Urness, *supra* note 680.

1050 *See* Clarren, *supra* note 83.

1051 H.R. Rep No. 107-151, at 1–2 (2001). For a history of Bull Run Protection, see How Bull Run is Protected, CITY OF PORTLAND, https://www.portland.gov/water/about-portlands-water-system/how-bull-run-protected [https://perma.cc/P2S9-PNGS].

1052 *See* FRANKLIN ET AL., *supra* note 256, at 433.

dramatically between the moist, carbon-dense forests of the Westside and the dry, fire suppressed forests of the Eastside.

The ecological forestry approach situates economic objectives within the boundaries of ecological health, striving toward a maximization of value consistent with fiduciary management[1053]—a vastly different approach than industrial forestry, which commodifies the forest for singular profit. As a policy matter, this new model of ecological forestry is strongest when coupled with a vision of economic and supply mechanisms to meet the needs of workers and local communities. In the past, these forest dependents[1054] have found derivative economic support (jobs and local tax revenue) from corporate timber enterprises—support that could have been much larger had the state of Oregon adequately taxed the companies[1055]—but the forest dependents have never held the reins of decision-making, so they remained vulnerable to industry cut-and-run, boom-and-bust cycles[1056] as well as decisions to export logs overseas instead of supplying local mills.[1057] With the growth of "investor-driven forestry" (control in the hands of REITs and TIMOs), communities have suffered even more.[1058] As Blumm and Brown emphasize, ecological forestry

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1053 It bears emphasis, however, that in the case of uniquely carbon-dense forests, protection from all harvest may well be the approach that maximizes their unparalleled value in the present climate emergency, despite foregone economic opportunity. In other words, the climate urgency arguably places a carbon premium on these trees that overcomes economic interests. To the extent that communities may gain economic benefit from leaving forests standing through carbon financing, that approach is consistent with the protection demanded of the trust in this unique situation.

1054 This Article eschews the term "stakeholders" as it has been used to describe industry's interest in regulatory processes. *See* Jason Fernando et al., *What Are Stakeholders: Definition, Types, and Examples*, INVESTOPEDIA (June 29, 2022), https://www.investopedia.com/terms/s/stakeholder.asp [https://perma.cc/U7KR-GN2W].

1055 Schick et al., *supra* note 63 (reporting on elimination of severance tax for large timber companies).

1056 *See* Niemi, *supra* note 691, at 15 (summarizing BLM study that explored the relationship between timber commodity use of forests and the health of local economies: "[The study] found that the timber industry is among the world's most volatile and this volatility has negative spillover impacts on local communities. As a result, the BLM concluded that proposed increases in log production likely would destabilize, rather than stabilize, the economy of nearby rural communities.").

1057 *See* Schick et al., *supra* note 63 ("In western Oregon, at least 40% of private forestlands are now owned by investment companies that maximize profits by purchasing large swaths of forestland, cutting trees on a more rapid cycle than decades ago, exporting additional timber overseas instead of using local workers to mill them and then selling the properties after they've been logged.").

1058 Schick et al. explore this dynamic. *See id.* (quoting Governor Kitzhaber: "The current state isn't working . . . for small mill owners. It's not working for rural communities. They don't have any control of their future[]").

must promote a "just transition for timber country."[1059] What that means is to be determined, but clearly the jobs of forest workers, the security of family woodlands, and the well-being of the community rank central within a commonwealth frame. This is in sharp contrast to the commodity frame that looks only to the profits and balance sheets of the distant corporate owner.

Deborah Scott and Susan Jane Brown explored the idea of community forestry in their 2006 article on the OCLA, making the case that the Act's declared purpose of promoting the "economic stability of local communities" could provide a basis for BLM to "dip its toes into community forestry."[1060] Tracing conventional modern industrial forestry—with its "focus on timber and exclusive responsibility to professional foresters"—to European forestry tenets that were spread to America and other countries through colonialism, the authors note that concepts of community forestry are gaining international attention:

> [N]ational governments have recognized that returning control to local communities can "reconnect the costs and benefits of forest management," thus providing an alternative to a system in which the majority of financial benefits go to private entities, and the economic, social, and environmental losses are felt by the greater society.[1061]

As the authors note, community forestry has a variety of potential meanings, ranging from more substantive participation in decision-making, to joint forest management, to full local control.[1062] Tribes have unique sovereign avenues to forge new management directions of federal forests, through co-management agreements and cooperative agreements.[1063] But with respect to private industrial timberlands, underlying property ownership remains the pivotal barrier to ecological community forestry—hence the proposals for land reform (addressed in Section VII.G below).

1059 *See* Blumm et al., *supra* note 6, at 57. The authors point out, "A robust landscape restoration program could provide living-wage jobs for local communities, although it needs to be coupled with other socioeconomic programs to enhance socioeconomic resilience." *Id.* They cite a growing body of literature pertaining to just transition approaches.

1060 Scott & Brown, *supra* note 134, at 311; *see also* OCLA of 1937, 43 U.S.C. § 1181a.

1061 Scott & Brown, *supra* note 134, at 309–10.

1062 *Id.* at 310.

1063 *See, e.g.*, *Statement of Charles F. Sams III, Director, National Park Service, U.S. Department of the Interior, Before the House Committee on Natural Resources, Regarding Tribal Co-Management of Federal Lands*, U.S. DEP'T OF THE INTERIOR (Mar. 8, 2022), https://www.doi.gov/ocl/tribal-co-management-federal-lands [https://perma.cc/AA94-GZ8R] (pertaining to National Park Service lands).

E. Seeking Natural Resource Damages from Past Logging That Injured Trust Assets

As noted earlier in this Article, analysts have quantified massive amounts of CO_2 pollution to the atmosphere attributable to industrial timber operations.[1064] Additionally, the clear-cutting, spraying, and roading practices have damaged public trust water resources. Citizen groups and local leaders are now well-positioned to identify potential damage to public trust waters by reference to maps available on the web that show navigable and non-navigable tributaries below cut-over slopes.[1065] In some notable contexts, the public trust principle holds polluters responsible for natural resource damages (NRDs) to public ecology. This principle, for example, establishes liability for marine oil spills (such as the BP oil spill of 2010 and the Exxon Valdez Oil Spill of 1989).[1066] Sovereigns, not citizens, are positioned to sue for such damages and use the gained funds toward the restoration of the resource.

Thus far, the timber industry has escaped all accountability for the pollution and other damage it has wrought to the vital public trust resources of Oregon as well as to the planet's atmosphere. An accounting of this damage is long overdue. Key to this analysis is a discerning delineation between a permissible, balanced level of harvest and the abusive, excessive logging that pollutes and injures other trust resources. At a time when new financing sources must be found to protect forests for carbon storage and other ecosystem benefits, potential pathbreaking NRD liability theories should be explored.

F. Financing Carbon Storage Outside of Offsets

Increasingly, market incentives that value forests for their carbon storage capacity are emerging. Unfortunately, most of those arrangements involve carbon "offsets," which are agreements to

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1064 *See* Law et al., *supra* note 57; *see also supra* note 864 (study detailing carbon pollution from Oregon forest clearing).

1065 *See Logging in Oregon*, https://logging.oregonhowl.org/ [https://perma.cc/9JQF-WKPU] (providing an interactive map used to visualize logging activities in the state of Oregon).

1066 *See generally* Mary Christina Wood & Dan Galpern, *Atmospheric Recovery Litigation: Making the Fossil Fuel Industry Pay to Restore a Viable Climate System*, 45 ENV'T L. 259, 290–293 (2015). NRD liability is rooted in common law but became ensconced in statutes that provide liability for marine oil pollution. *See* Oil Pollution Act of 1990, 33 U.S.C.S. §§ 2701–2762; Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–9675 (2012); *see also* Wood, *supra* note 761.

purchase forest conservation to justify continued fossil fuel pollution at another location—basically, a "pay to pollute" approach.[1067] The theory is that the forest will draw down and absorb an amount of carbon equivalent to that emitted as part of the offset. Some programs are voluntary, whereby corporations entice customers into purchasing offsets to justify the carbon emissions embedded in their purchase, as is the case with airline offsets. Other offsets are tied into government pollution programs, wherein a polluter can continue emitting greenhouse gasses if it purchases carbon credits from an approved land sequestration program—these are compliance-based offsets.[1068] In either case, the offset justifies further pollution purportedly through drawing down and sequestering carbon dioxide elsewhere. Indeed, many scientists and organizations have promoted forest conservation as a way to meet emissions reductions goals.[1069]

Notwithstanding their broad use, offsets are profoundly misguided as a climate strategy[1070] and have come under heavy criticism. First and most fundamentally, offsets operate to simply make the climate problem worse—legalizing or legitimizing continued pollution. By allowing business-as-usual fossil fuel pollution to continue, offsets prolong the necessary transition toward a renewable energy economy and undermine the rank urgency of decarbonization.[1071] Second, they fail to achieve direct-carbon compensation for the ongoing pollution. Unlike *direct emissions offsets* achieved through actual averted pollution—where the pollution allowed in one place can be calibrated to be equal to or less than the pollution avoided in another place—there is no equal and concurrent carbon refund accomplished through land-based processes. The entry of pollution into the atmosphere from the source is immediate and certain, but the pace of natural drawdown of the same amount of molecules through land measures elsewhere is

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1067 *See, e.g.*, Robin Pomeroy, *Carbon Offsets – How Do They Work, and Who Sets the Rules?*, WORLD ECON. F. (Sept. 2, 2022), https://www.weforum.org/agenda/2022/09/carbon-offsets-radio-davos/ [https://perma.cc/9RD7-TBUZ].

1068 California, for example, has a cap and trade program that uses carbon offsets. The program is under review. *See* Lisa Song & James Temple, *Lawmakers Question California Cap and Trade Policies, Citing ProPublica Report*, PROPUBLICA (Aug. 20, 2021, 12:00 PM), https://www.propublica.org/article/lawmakers-question-california-cap-and-trade-policies-citing-propublica-report [https://perma.cc/EL8F-JPVW].

1069 Bronson W. Griscom et al., *Natural Climate Solutions*, 114 PROC. NAT'L ACAD. SCIS. 11645, 11645–46 (2017).

1070 *See* Law et al., *supra* note 42, at 7 ("Forest carbon accumulation should not be considered as an offset that allows additional fossil fuels to be burned.").

1071 *See generally* Christa M. Anderson et al., *Natural Climate Solutions Are Not Enough*, SCIENCE (Mar. 1, 2019), https://www.science.org/doi/10.1126/science.aaw2741.

exceedingly slow in comparison, taking decades or centuries.[1072] During this time lag, the buildup of atmospheric carbon dioxide pushes the planet, and humanity, closer to irrevocable tipping points that could trigger runaway heating, and this alone should make land-based offsets unacceptable. During that same time lag, the climate heating underway may thwart the effectiveness of land-based processes that were relied upon to justify further pollution. In the case of forest offsets, trees may burn, releasing stored carbon. Third, the administrative mechanisms of verifying the land-based sequestration and assuring "additionality" remain highly questionable,[1073] and some analysts have said that these measures simply amount to shameful greenwashing without any net benefit to the planet.[1074] Finally, dedicating a forest to an offset scheme removes it from being an engine of sky cleanup, for its carbon sequestration cannot be double counted. As previously explained, cleanup of legacy carbon remains vital in order to regain climate stability. Securing meaningful levels of drawdown requires total, uncompromised maximization of all ethically available land area,[1075] but offset schemes increasingly monopolize huge swaths of forestlands for the purpose of allowing further pollution.[1076]

Alternative sources of financing carbon storage must be found. One potential source could be the federal dollars earmarked by the Biden

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[1072] *Id.* (referring to emissions from forest harvest, "Every hectare of forest that is cleared generates a carbon debt that requires decades to centuries for repayment.").

[1073] *See* Lisa Song & James Temple, *The Climate Solution Actually Adding Millions of Tons of CO_2 into the Atmosphere*, PROPUBLICA (Apr. 29, 2021, 5:00 AM), https://www.propublica.org/article/the-climate-solution-actually-adding-millions-of-tons-of-co2-into-the-atmosphere [https://perma.cc/D32W-4K9Y]; *see also* Shane R. Coffield et al., *Using Remote Sensing to Quantify the Additional Climate Benefits of California Forest Carbon Offset Projects*, 28 GLOB. CHANGE BIOLOGY 6789, 6790 (2022) (examining additionality from California's cap and trade program).

[1074] *See, e.g.*, Kirtana Chandrasekaran et al., *Nature Based Solutions: A Wolf in Sheep's Clothing*, FRIENDS OF THE EARTH INT'L (Oct. 27, 2021), https://www.foei.org/wp-content/uploads/2021/11/Nature-based-solutions_a-wolf-in-sheeps-clothing.pdf [https://perma.cc/Y24G-DMGQ]; Pomeroy, *supra* note 1067.

[1075] *See* Dennis Baldocchi & Josep Penuelas, *The Physics and Ecology of Mining Carbon Dioxide from the Atmosphere by Ecosystems*, 25 GLOB. CHANGE BIOLOGY 1191, 1194 (2019); *see also* Griscom et al., *supra* note 1069, at 11646 (estimate of global drawdown potential "constrained by a global land cover scenario with safeguards for meeting increasing human needs for food and fiber").

[1076] Recently, for example, a firm paid $1.8 billion to put 1.7 million acres of forest stretched across seventeen eastern states in an offset scheme, effectively removing that forest from the land base that could be dedicated to sky cleanup. *See* Ryan Dezember, *Wall Street Firm Makes a $1.8 Billion Bet on Forest Carbon Offsets*, WALL ST. J. (Nov. 2, 2022, 8:05 AM), https://www.wsj.com/articles/wall-street-firm-makes-a-1-8-billion-bet-on-forest-carbon-offset-11667390624 [https://perma.cc/P9WG-TW23].

administration for thinning across the Western States,[1077] though it would require a policy pivot from thinning to carbon storage in candidate areas. Another source, more conceptual at this stage, would be NRD judgments gained against the fossil fuel industry for its carbon pollution to the sky. If successful, recovered atmospheric NRDs could, in theory, be put to broad forest protection schemes in priority forests that have quantifiable potential for carbon drawdown.[1078]

G. Purchasing Key Industrial Forest Lands

Since the 1960s, large industrial timber companies controlled by real estate trusts or investment funds have purchased several hundred thousands of acres of smaller woodlands (which are typically owned by families) in Oregon.[1079] Ecologically responsible forest management remains unlikely on these lands, as these industry owners generally practice destructive "investor-driven forestry," which emphasizes short-term timber production.[1080] As noted earlier, the Westside forests remain exceptionally valuable for carbon drawdown, and the opportunity cost of purposing such lands for timber production instead of carbon sequestration cannot be ignored.

At least one forest organization, the Coast Range Association, makes a broad call for land reform,[1081] suggesting a three-step approach: (1) purchase key carbon-dense forests from industrial corporate

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1077 Leading scientists argue that, in some areas, thinning does not improve fire resiliency and yet releases considerable carbon. *See* discussion at *supra* note 864 and accompanying text.

1078 *See* Law et al., *supra* note 195 (establishing framework to prioritize high-carbon forest reserves in Oregon).

1079 *See* Schick et al., *supra* note 63 ("The [timber] profits are concentrated with a small number of companies controlled by real estate trusts, investment funds and wealthy timber families. Small timber owners, who grow forests that are older and more biologically diverse than what corporate owners manage, have sold off hundreds of thousands of acres. In western Oregon, at least 40% of private forestlands are now owned by investment companies that maximize profits by purchasing large swaths of forestland . . . ."); *see also* Chuck Willer, *Opinion: Get Wall Street out of Oregon's Forests*, STREETROOTS (Jan. 13, 2021), https://www.streetroots.org/news/2021/01/13/opinion-get-wall-street-out-oregon-s-forests?fb_comment_id=3831073843580309_3839320969422263 [https://perma.cc/GJ7X-JFL7].

1080 *See* Schick et al., *supra* note 63.

1081 It bears emphasis that the smaller family-owned woodlots are not the focus of land reform. Indeed, the opposite pertains, for it was the transfer out of family ownership that gave rise to investor-driven management dynamics on large swaths of Oregon forestland. Small family or individual owners generally have property expectations intertwined with liberty, privacy, cultural, and legacy expectations, whereas the REIT's and TIMO's property interest in the lands is purely financial return on investment. For general discussion, see WOOD, *supra* note 22, at 188–207.

owners; (2) vest the ownership in new social benefit businesses modeled after the electric co-ops and people's utility districts formed in the New Deal era to promote local, democratic control; and (3) secure the land with "working forest conservation easements" that provide protective restrictions, presumably while continuing harvest compatible with ecological imperatives and community objectives.[1082] While this vision conjures a host of questions, hurdles, and possibilities well beyond the scope of this Article, it should be noted that land reform has occurred in this country to address embedded social ills that could not otherwise have been cured. In Hawaii, for example, a state program transferred (with compensation) ownership of small parcels of land from landlords to lessees to address land oligopoly that remained as a vestige of early Hawaiian title regimes.[1083] Closer to the forest context, the federal government invalidated large railroad land grants because of fraudulent circumstances and failure to carry out conditions, as described in Section II.D.1 above. Some of those grants included rich holdings of timberland, such as the lands encompassed by the OCLA. The prospect of land reform in the context of investment-driven forest holdings warrants further examination, a task perhaps best delegated to a blue-ribbon panel commissioned for that purpose.

Several parameters might frame such an inquiry. First, as a general matter, an investment owner's willingness to sell characteristically turns on sale price and future profit opportunity. In theory, the regulatory restrictions on private industrial forestland would influence the cost of acquiring those lands for conservation and recovery, depressing the value of the timberland as the restrictions increase. Another depressive factor on price would be increased risk of lost investment due to drought or wildfire brought on by climate disruption.[1084] But along with this, the speculative opportunity to sell such lands as real estate holdings remains a concern[1085] and underscores the importance of fastening land reform to Oregon's land use scheme that protects forestlands from development.

1082 Willer, *supra* note 1079; Chuck Willer, *Climate & Oregon's Industrial Forests: A Green New Deal Proposal*, COAST RANGE ASS'N (2021), https://coastrange.org/wp-content/uploads/2021/01/A-GND-for-Industrial-Forests-FINAL-1.20.21.pdf [https://perma.cc/2L28-SH4N].

1083 Haw. Hous. Auth. v. Midkiff, 467 U.S. 229 (1984).

1084 *See* Niemi, *supra* note 691, at 11 (noting climate risks and concluding, with respect to state trust lands, that future management to "[p]roduc[e] timber likely will yield markedly lower returns than would be realized by managing them for conservation and restoration").

1085 Kitzhaber, *supra* note 240, at 2 (discussing the stability of the "forest land base").

A second matter concerns the title by which investment entities hold the timberland. While the title to most forestlands may be straightforward, land titles that trace back to railroad grants are mired in complexity and, perhaps, vulnerability. Such grants of valuable federal public domain were intended to promote the two public purposes of establishing a railroad and promoting settlement, so they required the railroad to make sales of small tracts to settlers not to exceed an established price per acre of land. Instead, certain railroads notoriously used their land grant to sell to major timber enterprises in large tracts for a higher price in blatant violation of the grant conditions.[1086] Some railroad grants (such as the O&C Land grant) were divested from the railroad corporations,[1087] and others have been subject to divestment proposals that have yet to come to fruition.[1088] A probe into the title history surrounding some investor owned forestlands may determine if a cloud on title exists or could materialize.[1089] If so, the bargaining table might be set for a voluntary sale of land at a discounted price.

1086 *See* Blumm & Wigington, *supra* note 134, at 2–3.

1087 Or. & Cal. R.R. v. United States, 238 U.S. 393 (1915).

1088 *See generally* JENSEN, *supra* note 223 (providing factual argument for divestment of grants to the Northern Pacific Railroad).

1089 *See supra* notes 224–236 and accompanying text (discussing Weyerhaeuser's acquisition of timberlands in Oregon). For example, some Oregon timberlands appear to trace back to the Northern Pacific Railroad Grants in the Mt. Rainier area exchanged for Oregon forestland. The Northern Pacific Railroad Grants came with conditions that, according to some authors, were ignored by the railroad in selling the lands. *See supra* Section II.D.1.a. Other timberlands held by modern timber companies may trace to the O&C Lands grants that may also have conditions that were ignored. *See* YOUST, *supra* note 230, at 189–90 (describing O&C Railroad land grant requiring the railroad to sell the land it received to "actual settlers" for no more than $2.50/acre and in tracts not exceeding 160 acres, and noting that, instead, the O&C Railroad sold timberlands in Coos County, Oregon to timber corporations (not true settlers) in tracts exceeding 160 acres, for more than 2.50/acre in violation of the grant). A title search unearthing the railroad grants and subsequent dispositions would be a complex endeavor, but a solid starting point is the case *Oregon & California Railroad Company v. United States*, 238 U.S. 437 (1915), where the Court held that the O&C Railroad had violated the conditions of its land grant but failed to rule as to the validity of illegal sales the railroad had made prior to the litigation. *See id.* at 436–37 ("[I]t might seem that restriction upon the future conduct of the railroad company and its various agencies is imperfect relief; but the government has not asked for more. In its bill it has distinguished between the sold and unsold lands and between the respective rights and interest, vested, contingent or expectant, in them; and *while it is asserted that all have become forfeited*, only the unsold lands and the rights and interest in them are included in this suit.") (emphasis added); *id.* at 437 (stating, "the decree in this suit shall be without prejudice to any other suits, rights or remedies which the government may have").

A third dynamic involves what Governor Kitzhaber calls "solution space."[1090] Land reform proposals will not likely gain traction within the limited political paradigm that still defines forest management in Oregon. To create opportunity, one might imagine the goals of responsible forest ownership dovetailing with other broad land visions, such as tribal land restoration.[1091] Notably, the Coalition of Oregon Land Trusts has launched a "land justice" campaign geared to supporting tribal sovereignty and promoting land return to tribal communities;[1092] some private land returns have already transpired in the Pacific Northwest.[1093] While the forest protection movement has not been explicitly coupled with calls for tribal land restoration, that kind of pairing may be capable of expanding the "solution space" for surmounting ownership barriers that stand in that way of forest reform on some investment owned timberlands.[1094] In another context, involving Pacific Northwest dam removal, advocates' calls for justice propelled an ambitious campaign to remove dams owned by private corporations to bring back salmon populations harvested by tribal people. The dismantling of the Elwha dams in Washington and recently approved funding to remove the Klamath Basin dams in Oregon

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1090 *See* Kitzhaber, *supra* note 240, at 9.

1091 *See* Blumm et al., *supra* note 6, at 69–71 (discussing tribal co-management of forestlands as future direction of forest policy).

1092 *See Land Justice*, COAL. OF OR. LAND TRS., https://oregonlandtrusts.org/our-work/land-justice/. Most examples of indigenous land return in Oregon involve public lands. *See* Western Oregon Tribal Fairness Act, Pub. L. No. 115-103, 131 Stat. 2253 (2018) (land returned and held in trust by the United States for the benefit of the Oregon Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians); Terri Hansen, *Coquille Tribe Regains 3,200 Acres of Forested Ancestral Homeland in Oregon*, INDIAN COUNTRY TODAY (Sept. 13, 2018), https://indiancountrytoday.com/archive/coquille-tribe-regains-3200-acres-of-forested-ancestral-homeland-in-oregon.

1093 *See* The Associated Press, *Methow Valley Land in Washington Returned to Colville Tribes*, KNKX (May 31, 2022, 1:45 PM), https://www.knkx.org/environment/2022-05-31/methow-valley-land-in-washington-returned-to-colville-tribes [https://perma.cc/K28X-PQDC]; Cassandra Profita, *Nez Perce Tribe Reclaims 148 Acres of Ancestral Land in Eastern Oregon*, OR. PUB. BROAD. (Dec. 25, 2020, 1:47 PM), https://www.opb.org/article/2020/12/25/nez-perce-tribe-eastern-oregon-reclaims-ancestral-land/ [https://perma.cc/FM5J-SM9K].

1094 When tribes regain aboriginal forestland, parties often agree to appropriate conservation mechanisms. *See* Mary Christina Wood & Zachary Welcker, *Tribes as Trustees Again (Part I): The Emerging Tribal Role in the Conservation Trust Movement*, 32 HARV. ENV'T L. REV. 373 (2008); *see also* Mary Christina Wood & Matthew O'Brien, *Tribes as Trustees Again (Part II): Evaluating Four Models of Tribal Participation in the Conservation Trust Movement*, 27 STAN. ENV'T L.J. 477 (2008).

punctuate a new era in river restoration tied inextricably to tribal justice.[1095]

In California, independent goals of forest protection and tribal land restoration converged in a groundbreaking campaign that transferred ownership of key lands from a large private timber corporation to a newly created council of tribes with aboriginal interests across the forestland. This pioneering example is worthy of attention for the model it may create elsewhere.[1096] The forestlands, located two hundred miles north of San Francisco in the Coast Ranges of Mendocino and Humboldt Counties, were the aboriginal lands of the Sinkyone Indian people and contained temperate ancient redwood forests.[1097] In the mid-1800s, colonizers massacred most of the Sinkyone people and took over the region, consigning the survivors to nearby reservations. Large-scale logging of the redwoods ensued, and in just over a century, most of the ancient forests were clear-cut, and roads were established on steep slopes, causing eroded hillsides, stream degradation, and unraveled habitat. In 1983, the industrial timber owner, Georgia-Pacific Corporation (G-P), received approval from the California Department of Forestry to harvest seventy-five acres of its Sinkyone property, encompassing a grove of redwoods[1098] located just a few miles south of the Sinkyone Wilderness State Park, which had been established in the mid-1970s.

The mechanics of this land-justice transaction are illustrative of the potential that may exist in Oregon. There, the Environmental Protection Information Center (EPIC) and the International Indian Treaty Council challenged the harvest plan in a case, *EPIC v. Johnson*, brought against G-P and California forestry officials.[1099] In July 1985, the California Court of Appeals ruled that G-P's harvest plan violated

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1095 Gillian Flaccus, *'Momentous:' US Advances Largest Dam Demolition in History*, AP NEWS (Nov. 17, 2022), https://apnews.com/article/business-california-native-americans-dams-salmon-311ea96fda0fe1b0052ab8cef9ae36a9 [https://perma.cc/4DNA-CDNU] ("The Klamath salmon are coming home," Yurok Chairman Joseph James said after the vote. "The people have earned this victory and with it, we carry on our sacred duty to the fish that have sustained our people since the beginning of time.").

1096 This discussion is adapted from Wood & Welcker, *supra* note 1094, at 411–14. *See also Our Purpose*, Intertribal Sinkyone Wilderness Council, https://sinkyone.org/ [https://perma.cc/NVN4-5858].

1097 *See* Wood & Welcker, *supra* note 1094, at 411.

1098 Forest advocates referred to this land as the "Sally Bell Grove," named for a Sinkyone Indian survivor who witnessed the massacre of her family as a child. *Id.* at 411–12.

1099 Env't Prot. Info. Ctr., Inc. v. Johnson, 170 Cal. App. 3d 604, 608–09 (Ct. App. 1985). For discussion, see Wood & Welcker, *supra* note 1094, at 412.

the California Environmental Quality Act and other requirements.[1100] The victory served as leverage for gaining a sale of G-P's 7,100 acres of its Sinkyone coastal property the following year to a consortium of buyers which included the California State Coastal Conservancy (SCC), Save-the-Redwoods League, Trust for Public Lands (TPL), and the California Department of Parks and Recreation. Almost half of this land (3,255 acres) was used to enlarge the southern end of the oceanfront Sinkyone State Park.[1101] TPL acquired title to the remaining land (approximately 3,900 adjacent acres) with funds that SCC, a state agency, loaned to TPL from a public bond measure.[1102] Federally recognized Northern California Indian tribes with ancestral ties to the land proposed that the land be returned to traditional stewardship and cultural conservation. To become a transactional player in the fate of the Sinkyone land, ten tribes joined in a consortium and formed a unique nonprofit organization, the InterTribal Sinkyone Wilderness Council (Council), established specifically to acquire and conserve the 3,900 acres.[1103] Over the subsequent decade, while the land remained secured by TPL's ownership, the Council raised the $1.4 million required for its purchase.

The resulting transaction was bifurcated in a way that gave conservation rights to a land trust yet returned ownership of the underlying land to tribal interests (the Council). The first transactional stage (occurring in 1996), involved TPL's sale of a unique conservation easement on the property to the Pacific Forest Trust, which had the effect of lowering the value (and price) of the property.[1104] Positioned

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[1100] Env't Prot. Info. Ctr., Inc. v. Johnson, 170 Cal. App. at 608, 623–25, 626–27; *see also* Wood & Welcker, *supra* note 1094, at 412. One requirement, stemming from California's CEQA, that the court found to be violated mandated tribal consultation:

> CEQA provides that agencies evaluating a project for its environmental impact consult with all agencies having jurisdiction over affected natural resources, including archaeological sites . . . Other provisions of CEQA reflect a strong legislative policy choice in favor of the preservation of Native American archaeological sites, cemeteries, and other sacred grounds . . . The presence of the archaeological site on the site of the proposed timber harvesting mandated CDF [CA Dept. of Forestry] consultation with at least the Native American Heritage Commission . . . CDF's failure to consult with the commission constitutes an abuse of discretion for failing to proceed in the manner required by law; that abuse of discretion is prejudicial.

Johnson, 170 Cal. App. 3d at 626–27.

[1101] Wood & Welcker, *supra* note 1094, at 412.

[1102] *Id.*

[1103] *Id.* at 412–13.

[1104] *Id.* at 413.

as the prospective buyer of the underlying fee title (encumbered by the easement), the Council participated in the easement negotiation process.[1105] The resulting easement memorialized the right of tribal families to gather and hunt traditional sources of foods and medicines, construct villages on the land using traditional construction methods, and it declared the right of local tribal members to camp in the villages on a rotating basis. Further, as part of the overall transaction, a condition stemming from SCC's loan to TPL secured limited public trail access on the property.[1106] Subsequent to the easement conveyance, in August 1997, the Council purchased the property—creating the first intertribal wilderness area in North America. In the years since, the Council has engaged in rigorous restoration across the land, reducing the possibility of future catastrophic fires by thinning dense stands of uniform trees (now growing in the aftermath of industrial logging), decommissioning roads, and restoring salmon habitat.[1107]

Several components of this example may be instructive to efforts in Oregon. First, the transaction emerged from the leverage of environmental litigation, which undoubtedly depressed the profit expectations of the industrial timberland owner, G-P. Second, a land trust (TPL) was pivotal in not only brokering the complex transaction but in securing the land for a decade while funds could be raised for tribal acquisition. Third, an agency (SCC) played a key role in providing an initial loan to TPL through a bond measure. Fourth, the tribal acquisition was part of a broader transaction that added land to an existing state park (3,255 acres were added to Sinkyone State Park); that component may have anchored the later purchase and likely gave the public a foothold in supporting the endeavor. Fifth, a conservation easement was key to both decrease the purchase price (by the tribal Council) and also assure protection in perpetuity in a manner compatible with tribal cultural expectations.[1108] Sixth, the formation of a tribal entity was instrumental in allowing multiple tribes to participate in gaining ownership and managing the wilderness. Those interested in

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1105 *Id.*

1106 *Id.*

1107 *Id.* at 384.

1108 *See generally* ELIZABETH BYERS & KARIN MARCHETTI PONTE, THE CONSERVATION EASEMENT HANDBOOK (2d ed. 2005). *See also* Nancy Duhnkrack, *Conservation Easements: An Overview*, OR. STATE BAR: SUSTAINABLE FUTURE SECTION, https://sustainablefuture.osbar.org/section-newsletter/20113fall2duhnkrack/ [https://perma.cc/4JR5-P6AH] ("Of the tools for conserving private land, conservation easements are frequently best suited to the task.").

creating a similar forest recovery/land justice vision for Oregon must start with a map to determine potential industry owners and dynamics that can enlarge the opportunity space for solutions.

H. Institutionalizing the Duty of Loyalty

Biased government decision-makers remain tempted to use public trust assets to serve their own political ends or bring profit to their economic allies. As such, the duty of loyalty remains core to the public trust. As noted in this Article, Oregon's legislative and administrative offices that interface with forestry remain riddled with bias and conflicts of interest.[1109] Reform geared to eliminating the bias should better align decision-making with the interests of the public.

Achieving that reform is a matter well beyond the scope of this Article, but some broad guideposts are evident. Certainly, a sharp focus should be on barring public leaders from voting or deciding on forestry matters after accepting campaign contributions by timber interests that stand to gain from the leader's decision. A separate set of reforms should focus on eliminating the inherent bias and imbalance that comes from populating administrative agencies with members of the very industry that is regulated by the agency. Or stated another way, the fox should not be guarding the henhouse. This principle should cast misgivings over the composition of Oregon's Board of Forestry, which allows three members who are individuals gaining income from the timber industry.[1110] While certainly timber industry representatives should engage in information exchange with the Board, the industry's embedded role in the Board's decision-making functions is highly problematic from a trust perspective. The same concern pertains to another public entity, the OFRI, charged with providing public education on forestry matters. With a board membership overwhelmingly comprised of timber industry interests,[1111] the OFRI has been criticized for becoming a de facto public relations and

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1109 *See supra* Section IV.B.1.

1110 *See* Monica Samayoa, *Lawmakers Seek Reduced Ties Between Timber Industry and Oregon Board of Forestry*, OR. PUB. BROAD. (Mar. 19, 2021, 9:00 AM), https://www.opb.org/article/2021/03/19/lawmakers-seek-reduced-ties-between-timber-industry-and-oregon-board-of-forestry/ [https://perma.cc/6YX5-GRYG].

1111 Davis & Schick, *supra* note 298 ("Lawmakers gave timber companies control of the institute with nine of the 11 voting board seats. The other two voting positions are a small forest landowner and a representative for timber workers. The board also has one public member who cannot vote and is prohibited from belonging to an environmental advocacy group.").

lobbying arm of the timber industry.[1112] Though not a regulatory agency, the publicly funded OFRI carries the duty of providing assessments not tainted by industry bias.[1113]

I. Instilling the Fiduciary Obligations in Federal, State, and County Trustees—Educating and Auditing

Most public officials are not aware of their public trust duties; instead, they view the statutory and regulatory framework as the totality of their sovereign obligation.[1114] Because the politicized approach to decision-making emerging from that statutory realm has become entrenched in many agencies, the focus must be on changing the entire paradigm of agency behavior rather than on making small adjustments. Instilling a fiduciary approach requires procedures to compel public trust analysis and link outcomes to the fiduciary obligations as inventoried and explained above in Parts III and V. To carry out these responsibilities, agencies must engage in a methodical analysis, exploring options to maximize public benefit from the forests and protect and restore ecology for future generations—rather than making decisions for the primary benefit of a private interest. Key to this decision-making is the precautionary approach, which places the burden of uncertainty on those seeking harvest to show that their proposed action improves the forest condition and ties to clear, legitimate public trust objectives. In this vein, the trustees must harness the best available science to meet their duty of prudence and skill in managing the forest trust. In the forbidding climate and biodiversity crises, where forests carry a premium value in salvaging a safe future for young people and posterity, forests can no longer be harvested with abandon as they have in the past. The growing ecological peril demands a higher standard of management competence and caution from government trustees of public assets.

This new accountability will not be easy to achieve. Against a historic institutional context marked by engrained fidelity to the timber industry, nothing short of a titanic shift in agency culture must take place for agencies to both embrace a trust approach and, ultimately, to

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1112 *Id.* ("The line between the timber industry's lobbying work and the institute's actions has often been blurred.").

1113 *See id.* ("Many of the companies represented on the institute's board are also members of the Oregon Forest & Industries Council, the industry's primary lobbying group, according to the trade association's website and tax filings.").

1114 As Section III.C.3 *supra* explains, statutory obligations persist but do not encompass the full trust obligation, which stands separate.

self-police their adherence to fiduciary obligations. In this regard, promising precedent and successful strategies emerge from other major governmental programs, including those that addressed sexual harassment in the workplace, consultation with tribes, and, more recently, diversity, equity, and inclusion concerns. Drawing lessons from these advancements, an agency may devise manuals and decision matrices, hold workshops, and use employee performance goals as tools to inculcate agency duties. Key to this effort must be a focus on the duty of loyalty (examined above) and eliminating bias and influence-intrusions in everyday decision-making.

Beyond this, regular government audits should assess whether the agencies are carrying out their fiduciary duties so that public beneficiaries may evaluate their government trustee's performance. On the state level, the office of the Secretary of State plays a central role in carrying out audits, routinely doing so across a variety of agencies. Increasingly, that office is moving beyond individual agency audits to tackle broader, critical issues of public concern—such as those relating to the COVID-19 pandemic, domestic terrorism, violent extremism, disproportionate impacts on communities of color, issues affecting tribes, and wildfire response, among others.[1115] The public trust should become not only a focus of audits at the individual agency level but also of audits that reach more broadly in scope to resource management across the state. But while audits examine agency practices and their effects, equally important is the follow-through after an audit is completed. The Secretary of State's office should have its own independent council to help it discern public trust obligations, possible violations, and responsive courses of action.

J. Empowering the Public and Voices for Future Generations

The public trust obligation is only effectual if it is enforceable by the beneficiaries—the citizenry—yet enforcement lies beyond the practical ability of many citizens. Members of the public lack the time to monitor their trustee's performance in such a complex area. They often lack the money to hire the experts needed to provide an independent evaluation and conduct an exhaustive review of government actions. And they lack access to private forestlands to assess practices. For all these

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1115 *Oregon Secretary of State Fagan Releases Audit Plan*, KTVZ (Feb. 5, 2021, 12:07 AM), https://ktvz.com/news/oregon-northwest/2021/02/05/oregon-secretary-of-state-fagan-releases-audit-plan/ [https://perma.cc/8GRK-TDAY]; *see* Shemia Fagan & Kip Memmott, *2021–22 Audit Plan*, SEC'Y OF STATE OF OR. AUDITS DIV., (Feb. 5, 2021), http://records.sos.state.or.us/ORSOSWebDrawer/Recordhtml/7795224.

reasons, the paradigm of a forest trust must include a robust mechanism to enable citizens to monitor and enforce the performance of their government trustees, both in managing public forests and in regulating private forests.

An ombudsman specifically designated to monitor trustees and seek judicial enforcement of the trust on behalf of the public could provide key support. The independent legal authority to press judicial enforcement is crucial because the Oregon Department of Justice defends its client agencies, even when their positions arguably deviate from the public's trust interests. Offices of ombudsmen, or similar offices, have been crucial in gaining public trust victories in the courts. In Hungary, for example, the leading case that established public trust duties for forest management was filed by the nation's Office of the Ombudsman.[1116] In the United States, in a wholly different context, the New Jersey Public Advocate made arguments on behalf of the public in litigation that secured beach access under the public trust.[1117] In Oregon, legislation establishing an Office of Ombudsman was proposed by the Oregon State Bar's Sustainability Section in 2012.[1118] While it never passed (and fell short in enforcement mechanisms), the concept provides a platform for consideration.

Given the complexity and urgency of many environmental problems, "citizen-beneficiary advisory groups" provide another practical means of monitoring trustees. Advisory groups have several precedents in natural resource management.[1119] Indeed, President Clinton established these in the NFP. The Province Advisory Committees, or PACs, were comprised of not only citizens but also of local, state, and federal officials; they had the stated purpose of "help[ing] to facilitate communication between federal and non-federal entities to help implement the [NFP]."[1120] If achieved, Citizen Beneficiary Advisory Councils (CBACs) must have the clear purpose of monitoring and enforcing the public trust. As a group designed to hold the trustees accountable, the CBACs logically would not have members of those

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1116 *See* Sulyok, *supra* note 433, at 367.

1117 Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355, 369 (N.J. 1984).

1118 BLUMM & WOOD, *supra* note 25, at 551–52.

1119 *See generally The Federal Advisory Committee Act (FACA) Brochure*, U.S. GEN. SERVS. ADMIN. (last updated Feb. 26, 2019), https://www.gsa.gov/policy-regulations/policy/federal-advisory-committee-management/advice-and-guidance/the-federal-advisory-committee-act-faca-brochure [https://perma.cc/SJ6G-YL37].

1120 *Provincial Advisory Committees (PACs)*, U.S. DEP'T OF AGRIC. (Apr. 19, 2017), https://www.fs.usda.gov/detail/okawen/workingtogether/advisorycommittees/?cid=stelprdb5379750 [https://perma.cc/LSR2-SW48].

same trustee agencies on the council itself. Rather, the council would work with agency liaisons to ascertain information and agency perspectives. To maximize the advantages of this structure, members should have full access to the expertise, records, and staff of the federal, state, and county agencies. They could, for example, request information on forest cover, logging projects, ownership figures, tax receipts, habitat, water resources, and such. They should be empowered to gain mapping and other data compilation services from the agency trustees. A research fund should be available to allow contracting with independent scientists and other relevant experts that can provide expertise outside the trustee agencies.

CONCLUSION

This Article has invoked the enduring public trust principle to map a new horizon in the management of Oregon forests—which remain vital commonwealth, supporting our collective survival and welfare. Lifting the focus above the fragmented ownership and management boundaries that cause unproductive stalemates in forest policy and present a mismatch with ecology that knows no boundaries, the discussion characterized an integral Oregon Forest Trust managed and regulated by a set of sovereign trustees on the federal, state, and local level. Within this encompassing paradigm, the legislative and agency officials are positioned as co-trustees of the Oregon Forest Trust, with the obligation to work together in carrying out their fiduciary duties to the public.

Setting forth the basic fiduciary obligations of government trustees, this Article compiled fast-evolving science and practical concerns necessary for citizens to evaluate forest decisions and hold their trustees accountable. It contextualized such duties in the prevailing statutory framework, underscoring areas where the agencies and legislative actors are falling quite short on their sovereign obligations. Ultimately, the Oregon Forest Trust cannot endure without these leaders and agencies embracing their fiduciary duties to the public as indelible sovereign obligations. Oregonians cannot be expected to bring administrative challenges and court actions every time their trustees bend to private pressure to commodify the great forests and destroy their full value as commonwealth. As one scholar explained in summarizing the Hungarian Forest Decision that resoundingly upheld a trust obligation to protect that country's forests,

> Somewhat paradoxically, the very existence of the decision signals the greatest weakness of the functioning of the public trust doctrine

> . . . . Namely, that a public trust provision can only reach its full potential, and fulfil the ideals it aspires to, if embraced by the sovereign trustee, *i.e.* the government and the legislature, and not (only) by judicial bodies. . . . Only if the fiduciary obligations under the constitutional public trust doctrine are taken seriously by political stakeholders of the present can this constitutional imperative efficiently guard against . . . securing short-term profits at the expense of the natural capital and heritage.[1121]

Amidst a cataclysmic climate emergency caused by humanity's ravage of its only home, a long-overdue reckoning must now secure the great forest cathedrals from "the attack of that worst of all microbes, the dollar."[1122] Oregonians love their forests—*their* forests—and will show up at hearings, testify to the legislature, sit in trees, circulate petitions, produce documentary films, boycott rapacious practices, and, most importantly, teach their children about their rightful forest legacy that stays tied in every consequential way to their own future survival.[1123] But the language of citizens makes a difference. If the people speak from the depths of those narrow statutory canyons carved into the legal landscape, the moral wrong of ecological annihilation will never agonize the decisionmakers, and the political power of moneyed interests will continue to drive state forest policy toward Nature's bankruptcy. The trust provides perhaps the greatest advocacy tool to the public, as it is grounded in the social compact and directs its moral force toward protecting future generations. Increasingly, research shows that corporations depend on a "social license" to operate outside the regulatory structure.[1124] Despite the legal permissions readily granted by government officials to destroy or degrade forestlands, the

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1121 *See* Sulyok, *supra* note 433, at 374–75.

1122 Wood, *supra* note 1.

1123 A mapping tool developed by Oregon Wild provides the public with information on past and current logging on private and public lands across Oregon. *See* Chandra LeGue, *Mapping Tool Shows Shocking Extent of Logging Across Oregon*, OR. WILD: OR. WILDBLOG (Jan. 16, 2019, 2:41 PM), https://oregonwild.org/about/blog/new-mapping-tool-shows-shocking-extent-logging-across-oregon [https://perma.cc/C3M7-SZJ6].

1124 *See* Eleanor Ford et al., *The Role of Community and Company Identities in the Social License to Operate for Fin-Fish Farming*, 553 AQUACULTURE 738081 (2022). The authors explain that, because site-scale opposition impedes resource extractive industries, they depend on a "social license to operate" ("SLO") outside the legal permits required. They describe:

> SLO provided a conceptual framework through which to recognize and explore social grievances. The use of the concept has now expanded from the mining sector, and has been applied across other extractive sectors such as forestry and oil and gas, as well as . . . practices across both terrestrial and marine environments. . . . SLO is granted by communities . . . .

Id. at 1.

People alone are empowered to grant—or withhold—this social license. As Governor Kitzhaber suggests in his Oregon forest report, perhaps it is time to "updat[e] the 'social compact' between forest businesses, forest communities and the greater state population."[1125]

George Lakoff, a cognitive linguist who has written about the power of mental frameworks, notes, "Reframing is changing the way the public sees the world. It is changing what counts as common sense."[1126] Oregonians stand with the world in an existential moment in human history, a time in which climate disruption eclipses all other threats. The primordial rights embodied in the public trust have surfaced at epic times in history to spur transformative change. They forced the Magna Carta on the English monarchy in 1215 and propelled Mahatma Gandhi's great Salt March to the sea in 1930. Reaching well beyond the legal and civic realm, the trust evokes a moral language. It taps a wellspring of human understanding that remains instinctive, passion-bound, and deeply shared among citizens of distant cultures—because it encompasses an instruction to protect our children's rightful legacy. This trust reverberates in the ancestral memory of those who defended Oregon forests so long ago.

When future Governors, state legislators, State Land Board members, county commissioners, and all officials in the Oregon Department of Forestry, U.S. Forest Service, and BLM recognize their fundamental duties as co-trustees toward this state's forest endowment, they will make a fundamental shift in their work."[1127] Rather than further commodify the Oregon Forest Trust, these trustees will rebuild the state's natural wealth and reach toward restoration, abundance, and resilience. That day cannot come fast enough for the children of Oregon and for all children of the world who must inherit planetary life systems teetering on the brink of collapse. Through creative and bold vision, undaunted persistence, outrage tempered only by strategy, and courage rising in the soul from time spent among the ancient trees, the citizens of Oregon will reclaim their rightful Oregon Forest Trust for all Posterity—and may lead the rest of the world in doing so as well.

[1125] Kitzhaber, *supra* note 240, at 16.

[1126] LAKOFF, *supra* note 39.

[1127] When Governor Kitzhaber recently addressed the Board of Forestry, he made an inspiring appeal to think of forest policy, instead of an area consigned to permanent divisive conflict, to rather be the "fulcrum that . . . solves for multiple social, economic and environmental values [and] also helps restore our sense of shared identity as Oregonians." Kitzhaber, *supra* note 753.