



Forest Carbon Coalition
Advancing nature's climate solutions

Repairing America's Tattered Forests

Maximizing natural carbon removal
while revitalizing our forgotten rural areas



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Blue Mountains, Oregon

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Introduction

The Tragic State of US Forestlands

Drastic changes are needed in the way federal, state and private forestland owners in the US are managing their lands in order to achieve the global goal of ending deforestation and forest degradation by 2030, maximize natural carbon removal, and reverse multidimensional poverty in our forgotten rural areas. Congress must intervene since federal and state agencies that oversee management of the nation's forests are overly influenced by corporate interests and continue to offer false solutions that pad Big Timber's bottom line but expose millions of Americans to the ill effects of deforestation and climate change.

Despite what Congress hears from timber lobbyists and their ad campaigns, the nation's forestlands are being grossly mismanaged and exist now in a highly degraded state. Prior to colonization, the land was graced with some of the biggest, tallest, oldest and most extensive forests on Earth. Vast expanses of centuries old hemlocks, hickory, beech, oaks and pines populated the East, South and Great Lakes regions while towering stands of sequoias, redwoods, spruce, fir and cedars dominated the coastal plains and mountains from northern California to Alaska. Big, old, carbon rich trees were abundant in every forested region.

Tragically, less than seven percent of this natural heritage remains unlogged today in scattered



fragments mostly found on federal forestlands.¹ The other ninety-three percent has been lost to agriculture, urbanization and infrastructure or is being managed in ways that emphasize short rotation timber production above all other uses and values. Less than eight percent of US forests are protected at a level where harmful human uses such as mining, oil and gas leasing, and logging are significantly constrained.²

As a result, nearly all remaining US forests are highly degraded, being constantly stressed by a litany of human pressures from logging, grazing, mining, roads, off road vehicles, oil and gas leasing, infrastructure, human-caused fires, invasive species and aerial spraying of pesticides and fertilizers. According to a recent study published in *Nature Communications*, less than twenty two percent of US forests are surviving at high levels of ecological integrity (Figure 1).³ Thirty-nine states and territories have less than five percent of their forests in this condition.

The United States' failure to protect and repair its forestlands comes with a high price tag for the global climate, for biodiversity, and for the prosperity and wellbeing of nearby communities. The logging and wood products sector is one of the largest sources of greenhouse gas emissions in the US, though these emissions are presently excluded from its national or state-level inventories.⁴ In addition, landscapes dominated by the timber industry's clearcuts, dense logging road networks and timber plantations are far more susceptible to the effects of climate change – they burn hotter and faster,⁵ they produce less water, they are more prone to damaging floods and storms and they are more infested with invasive species – all stressors that will be amplified by climate change.

In terms of biodiversity loss, thousands of species dependent on structurally diverse primary and natural forests are imperiled. As noted by American Forests, “[f]rom Maine to Arizona, America’s forest species are in a steady slide towards extinction.”⁶ The loss of old trees is an important factor. Less than thirteen percent of US timberlands support trees over 100-years old, far short of their potential to grow for centuries before succumbing to natural disturbances.⁷



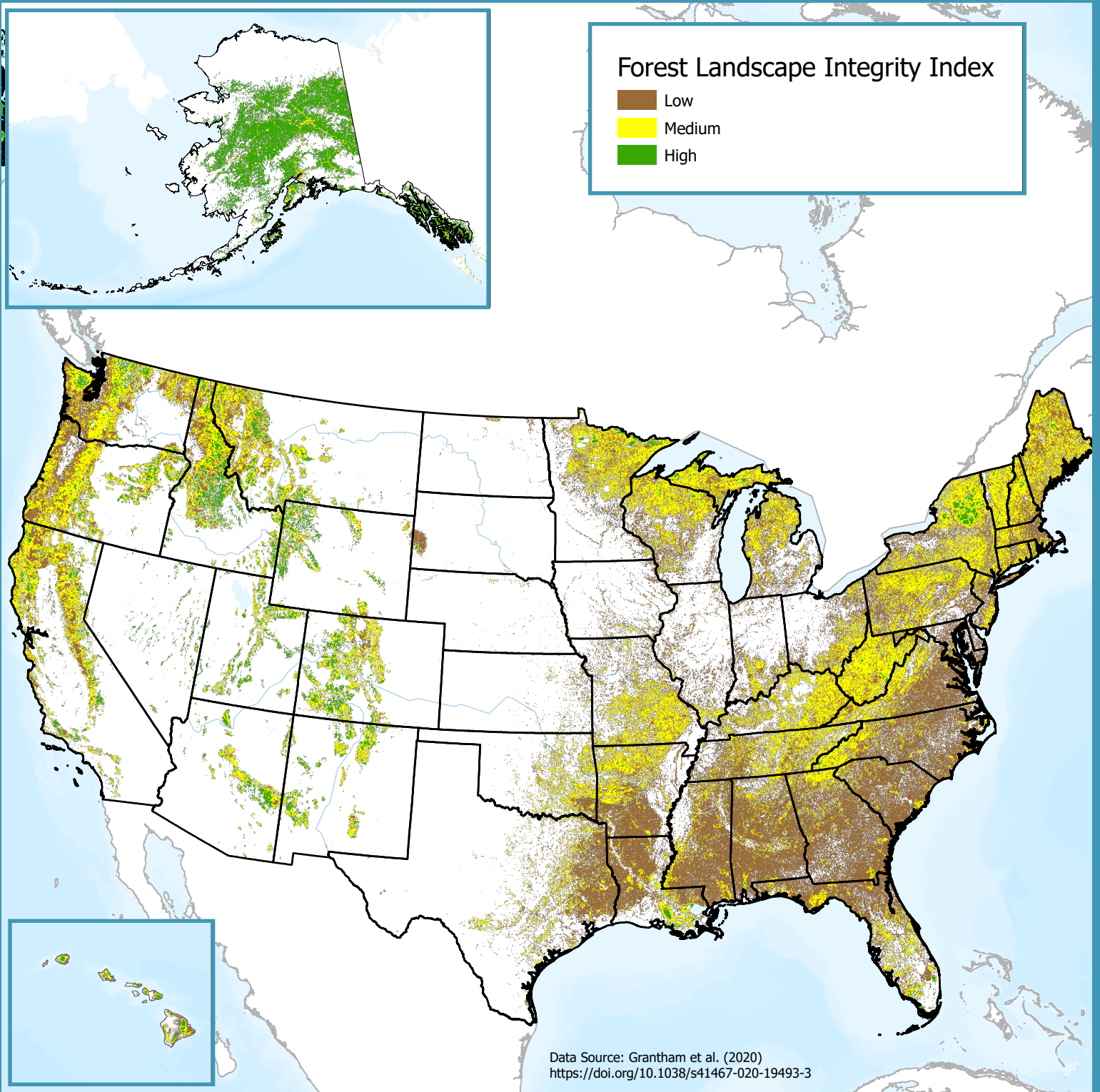


Figure 1: Forest Landscape Integrity Index for the United States

Forest Landscape Integrity Index for the United States

(Percent of forested acres in each FLII group)

State or Territory	% Low	% Medium	% High	State or Territory	% Low	% Medium	% High
Alaska	0.64%	7.59%	91.76%	Nebraska	54.58%	44.47%	0.95%
Alabama	85.77%	14.09%	0.13%	Nevada	3.48%	26.55%	69.97%
Arizona	8.14%	53.17%	38.69%	New Hampshire	41.84%	55.94%	2.22%
Arkansas	61.27%	38.34%	0.39%	New Jersey	64.83%	35.16%	0.00%
California	32.00%	56.26%	11.74%	New Mexico	5.85%	54.97%	39.17%
Colorado	11.02%	58.94%	30.04%	New York	36.31%	56.80%	6.89%
Connecticut	45.99%	54.01%	0.00%	North Carolina	75.74%	23.50%	0.76%
Delaware	97.99%	2.01%	0.00%	North Dakota	70.27%	29.73%	0.00%
District of Columbia	100.00%	0.00%	0.00%	Ohio	56.61%	43.37%	0.02%
Florida	69.15%	28.05%	2.79%	Oklahoma	31.79%	67.11%	1.10%
Georgia	85.75%	14.11%	0.14%	Oregon	38.02%	52.10%	9.88%
Hawaii	28.28%	47.67%	24.05%	Pennsylvania	49.64%	49.99%	0.37%
Idaho	24.12%	44.44%	31.45%	Puerto Rico	99.10%	0.90%	0.00%
Illinois	80.00%	19.90%	0.10%	Rhode Island	51.50%	48.50%	0.00%
Indiana	65.53%	34.25%	0.22%	South Carolina	87.75%	12.22%	0.03%
Iowa	79.14%	20.86%	0.00%	South Dakota	77.41%	19.37%	3.23%
Kansas	64.25%	35.14%	0.61%	Tennessee	49.57%	49.91%	0.52%
Kentucky	33.10%	66.37%	0.53%	Texas	63.86%	35.37%	0.77%
Louisiana	75.82%	20.86%	3.32%	U.S. Virgin Islands	96.51%	3.49%	0.00%
Maine	41.28%	57.56%	1.16%	Utah	4.81%	45.94%	49.26%
Maryland	81.66%	18.27%	0.07%	Vermont	22.01%	74.98%	3.02%
Massachusetts	59.82%	40.07%	0.11%	Virginia	67.14%	32.44%	0.41%
Michigan	43.56%	53.60%	2.83%	Washington	43.43%	47.21%	9.37%
Minnesota	40.19%	55.35%	4.46%	West Virginia	25.38%	72.59%	2.03%
Mississippi	83.52%	16.45%	0.03%	Wisconsin	47.60%	51.12%	1.28%
Missouri	41.08%	58.71%	0.21%	Wyoming	11.50%	45.77%	42.73%
Montana	25.33%	57.62%	17.05%	United States	42.38%	36.55%	21.07%

The social costs of deforestation and forest degradation in the US are alarming. Rural communities adjacent to deforested or degraded forests suffer from chronic multidimensional poverty, community instability, high costs associated with environmental damages to water supply, fisheries and recreation and few opportunities to diversify since the land is locked up for timber production and highly degraded.⁸ The 'resource curse,' a term most often used in developing country context is in an apt description of the dismal socioeconomic conditions in America's rural communities where industrial forest practices prevail.⁹

The US has an international and moral obligation to turn this around. As the world's leading producer and consumer of wood products and with forestlands that can serve as some of the world's most productive carbon sinks, America can repair its tattered forests in a manner that can significantly advance global ambition on frameworks such as the Paris Accords, Rio +20, the Convention on Biological Diversity, the Sustainable Development Goals (SDG), and, most recently, the Glasgow Leaders Declaration on Forests and Land Use.¹⁰ Meeting the Glasgow Leaders pledge to end deforestation and forest degradation by 2030 will also make a significant contribution to the cross-cutting SDG of halving multi-dimensional poverty by 2030.¹¹ Despite a flurry of executive orders, legislation, and policy pronouncements by politicians from both major parties, the pace of deforestation and forest degradation in the US has not slowed down. We're good at pointing the finger at developing countries but consistently ignore the problem here at home.

Since signing the Glasgow Leaders Declaration, the Biden Administration has increased the volume of timber sold and cut on our national forests¹² and is using billions of dollars in the Inflation Reduction Act and Bi-Partisan Infrastructure Bill to subsidize more logging and provide easy money to corporations for mills and processing facilities.¹³ Large blocks of mature and old growth forests are on the chopping block despite overwhelming scientific consensus that all these forests need to be protected for their carbon stores.¹⁴ Exports of wood pellets - an ecological and environmental justice disaster recently featured in the New York Times¹⁵ - have soared 498% since 2012 and spiked up rapidly between 2021 and 2022.¹⁶ All of these facts underscore the necessity of Congressional oversight and leadership.

The Forest Carbon Coalition has compiled this roadmap to communicate the broad scope of forest policy reforms needed to reverse these alarming trends. We identify six strategic goals as well as dozens of specific policy changes endorsed by our coalition or our individual members. It is our hope that members of Congress and officials in our public agencies can work together to implement as many of these as possible as quickly as possible in order to fulfill our international pledges and promises while reversing biodiversity loss and helping to revitalize rural communities hit hard by the socio-economic damages of deforestation and forest degradation.





Figure 2
 Proposed Eastern Wildway,
 Version 2.2.

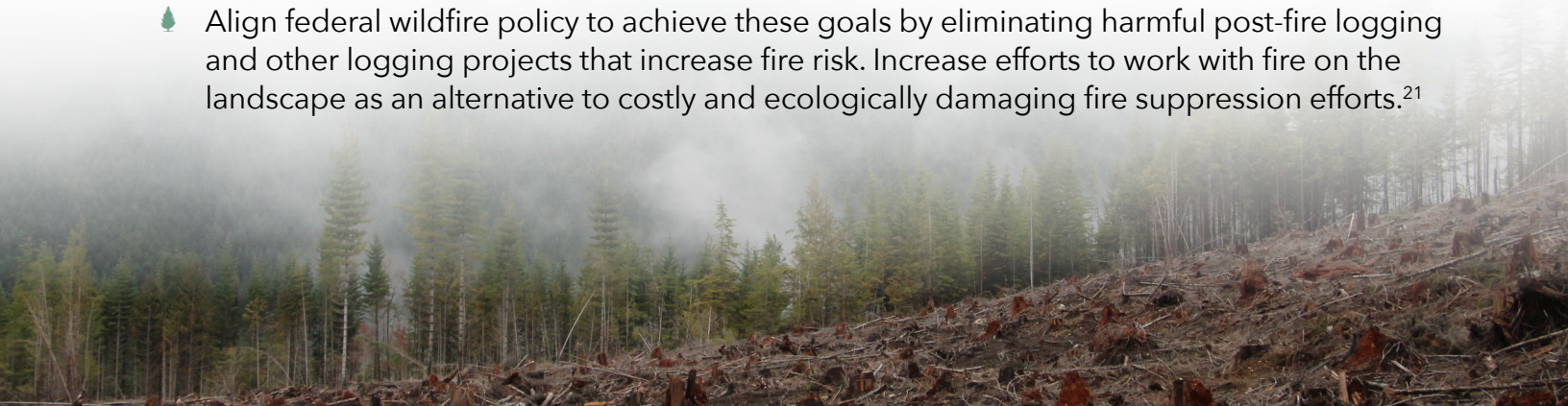
Areas in dark green are proposed potential core natural areas where biodiversity is conserved at a high level. Areas in light green are potential habitat corridors where human uses are aligned with the need for species migration. Source: The Wildlands Network, Eastern Wildway, available online at: <https://wildlandsnetwork.org/wildways/eastern/>.

Strategic Goal 1: Halt and Reverse Deforestation and Forest Degradation

Problem statement: The US continues to lose carbon dense primary and natural forest cover to logging, urbanization, agriculture, and tree plantations. Annually, over 5 million acres – nearly the size of New Jersey – are cut down.¹⁷ Forests that remain are highly fragmented and degraded, with only 21% of the forested land base nationwide supporting forests with high ecological integrity.

Strategies and policy interventions

- 🌲 Nationwide forest plan amendments placing all remaining tracts of unlogged primary and carbon dense natural forests on federal lands into protected area status as refugia for native species, forest carbon reserves, and blueprints for forest recovery. Plan amendments, which could be adopted in less than two years, should also establish forest carbon storage targets for each unit of the federal forest system and propose strategies to achieve those targets.
- 🌲 Put in place strong financial incentives for protection of primary forests and other endangered ecosystems on state and private lands and to prioritize federal land acquisition programs in these areas.
- 🌲 Enact a nationwide No-Net-Loss policy (NNL) to reduce deforestation from land use conversion. A forest NNL policy, already enacted or under consideration in some states, can build on the successful federal wetlands mitigation banking model.¹⁸ Carbon can serve as the basis for the NNL policy to ensure no net loss of carbon sequestration capacity.
- 🌲 Authorize major new investments in afforestation to revert underutilized cropland and tree plantations (especially biomass, pulp and paper) to natural forest cover.
- 🌲 Authorize major new investments in forest recovery to fight invasive species, close legacy logging roads, stabilize soils, reintroduce native species, reintroduce natural wildfire regimes and reforest degraded areas.¹⁹
- 🌲 Building on the work of the Wildlands Network and other science-based conservation plans, identify and protect landscape level core areas, corridors and buffer zones to facilitate the movement of native forest dependent species being isolated by human activities and climate change (Figure 2).²⁰ Focus federal investments for acquisition and recovery in these areas and especially on the margins of existing protected lands like national parks, monuments and wilderness areas.
- 🌲 Align federal wildfire policy to achieve these goals by eliminating harmful post-fire logging and other logging projects that increase fire risk. Increase efforts to work with fire on the landscape as an alternative to costly and ecologically damaging fire suppression efforts.²¹



Strategic Goal 2: Diversify and Revitalize Forest Dependent Communities and Remedy Environmental Injustices

Problem statement: Rural communities on the front lines of deforestation and forest degradation are suffering from chronic, multi-dimensional poverty, racial exclusion and environmental injustices. Timber towns are among the poorest, and most unstable due to their proximity to environmental degradation and vulnerability to the vagaries of international trade. This is a US manifestation of the resource curse that plagues economies dominated by extractive industries anywhere in the world.

Strategies and policy interventions

- 🌲 Create and sustain nearly 50,000 new jobs in economically distressed rural communities by redirecting at least \$2 billion per year from Forest Service and Bureau of Land Management logging-related budgets to support labor intensive forest recovery projects like culvert repair/replacement, road decommissioning, reintroducing native fish and wildlife and training a diverse new generation of forest owners.²²
- 🌲 Through the USDA Rural Development Program, provide grants, loans, and technical assistance to rural communities to develop and implement economic development plans based on uses compatible with forest protection. Emphasize jobs in the recreation, tourism, non-timber forest products, fisheries, and scientific research sectors.
- 🌲 Expand the community notification program described by EO 14008 Sec 222(b)ii to monitor and provide real-time data to the public on logging related pollution and risks associated with pesticide and herbicide applications, burning of slash, and logging operations.
- 🌲 Scale up payments for ecosystem services (PES) markets to reward landowners practicing labor intensive, climate smart forest practices that simultaneously further goals for carbon storage, carbon sequestration, climate resilience and reduced emissions. Practices should be limited to those with proven climate benefits, including proforestation, afforestation and measures to convert tree plantations back into real forests.
- 🌲 Ensure that all federal agency decisions affecting forestlands are guided by the Obama Administration's Principles, Requirements, and Guidelines for Water and Land-Related Resources Implementation Studies.²³ Following this guidance will ensure that environmental justice, community collaboration, and best available science are incorporated into decision-making and that such decisions maximize sustainable economic development.
- 🌲 Reduce deforestation pressure while creating domestic manufacturing jobs by enacting restrictions on the export of raw logs,²⁴ wood pellets and pulp.



Strategic Goal 3: Reduce Forest Ownership by Short-Sighted Investors

Problem statement: A growing share of US forestlands is being colonized by Wall Street, foreign and other large corporations with no capacity for the kinds of long-term commitments to the land needed to solve the climate crisis while benefiting rural communities. Instead, they are managed to maximize financial returns to distant investors, which increases logging pressure.²⁵ At the same time, the US stands to lose an entire generation of young forestland owners unless meaningful opportunities for making a living and enjoying a more diverse culture and community are made available.²⁶


Strategies and policy interventions

-  Rescind tax loopholes that exempt Real Estate Investment Trusts, Timber Investment Management Organizations and other investor-held forestland owners from paying corporate income tax. Collaborate with states to close property tax loopholes that benefit these corporations. Earmark tax proceeds for a Beginning Forester program to train a diverse, next generation of forestry professionals.
-  Congress should pass a nationwide corporate land reform bill to halt and reverse the accumulation of productive forestlands by Wall Street, foreign, and other corporations with short time horizons and absentee landlord status. Build on the successful corporate farming statutes passed in nine midwestern states by expanding their scope to include forestlands as well.²⁷
-  Stimulate the transfer of divested corporate forestlands to a diverse, new generation of forest owners by equipping young and beginning farmers and foresters with access to grants, low interest and forgivable loans, interactive technologies, and other tools to facilitate purchase and management of forestlands in accordance with climate smart principles.

Strategic Goal 4: Reduce Wasteful Consumption of Wood Products

Problem statement: More than one out of every two trees cut down in the United States goes to make paper, pulp, pellets, packaging and feedstock for biomass energy facilities.²⁸ Many other trees are cut down unnecessarily to fuel construction of oversized, energy inefficient housing. Wood and paper waste is the largest component of US landfills, signaling much is to be gained by conservation, efficiency, and demand reduction. Over-use of virgin wood competes against recycled and reclaimed wood as well as wood substitutes with a lower ecological footprint.

Strategies and policy interventions

-  End federal subsidies, investments and other forms of promotion for wood-based paper, pulp and biomass products. Exclude woody biomass energy from the federal renewable electricity production tax credit program.

- 🌲 Place a moratorium on all federal permitting for new wood-based paper, pulp and biomass facilities. Work with applicants to alter proposals to rely on feedstocks with a lower carbon and ecological footprint.
- 🌲 Bolster markets for recycled and reclaimed wood as well as non-wood alternatives with lower carbon and ecological footprints through changes in federal procurement practices and subsidies.
- 🌲 Work with states to enact building code reforms to reduce wasteful use of wood products, encourage low carbon substitutes for conventional materials, and limit the proliferation of oversized structures.²⁹

Strategic Goal 5: Reduce the Climate Impacts of Industrial Forest Practices

Problem statement: The logging and wood products sector is one of the largest sources of GHG emissions in the US. Despite this, both national and state-level GHG inventories omit this sector. In addition, conventional logging practices such as short rotation clearcutting, timber plantations, and construction of dense logging road networks are making the land more vulnerable to the effects of climate change by increasing the incidence and severity of wildfires, heat waves, droughts, water shortages, water pollution, flooding, wind damage, invasive species and human exposure to novel diseases.³⁰

Strategies and policy interventions

- 🌲 Account for GHG emissions from the logging and wood products sector in national and state-level GHG inventories. At minimum, include emissions associated with the release of carbon from wood products, combustion and decay of logging residuals, forgone sequestration, soil disturbance and application of chemicals and fertilizers.
- 🌲 Enact market-based mechanisms to reduce logging and wood products emissions in the most cost-effective manner such as through a forest carbon tax and reward program, cap and trade within the forestry sector or payments for carbon storage.³¹ Work with environmental justice leaders in designing these programs to provide maximum benefit to economically distressed communities, communities of color, and Native Americans.
- 🌲 Work with States to modernize forest practices laws to dramatically increase the extent of forestland on which forests are allowed to grow to their maximum ecological potential (pro-forestation). Condition federal forestry assistance on states' progress in meeting this goal.
- 🌲 Mirroring the fossil fuel subsidy review called for in EO 14008 Section 209, all heads of agencies shall identify any harmful logging subsidies provided by their respective agencies and take steps to eliminate those subsidies from the budget requests for FY 2024 and beyond.³²
- 🌲 As they did with the public lands oil and gas leasing program described in EO Section 209, the USDA and USDI should pause the commercial timber sale program on federal lands pending completion of a comprehensive review and reconsideration of the program in light of its climate impacts and cost ineffectiveness. Work with states to do the same on their public forestlands.

- 🌲 To the extent that federal timber sales go forward after such a comprehensive review and again as with oil and gas, adjust royalties paid to the USDA or USDI to account for corresponding climate costs. Ensure that the social cost of carbon is factored into all federal, state, and local public agency decisions that facilitate logging.

Strategic Goal 6: Fight Big Timber's Greenwashing and Misinformation

Problem statement: Like Big Tobacco, Big Oil, and many corporate cabals before it, Big Timber has been adept at getting decision makers to promote its products, thwart its competitors, and subsidize its operations by greenwashing and making false and misleading claims to investors, customers, public officials, and frontline communities.³³ As a result, producers of more sustainable materials face a competitive disadvantage and the policy landscape has been distorted to promote industrial tree plantations that maximize profits for investors rather than real forests that provide multiple benefits to communities.

Strategies and policy interventions

- 🌲 Pass legislation implementing the Securities and Exchange Commission (SEC) proposed climate risk disclosure regulations (now in regulatory limbo) and specify that the scope of gross GHG emissions disclosed by reporting entities must include both biogenic and fossil fuel sources throughout the product life cycle supply chain.
- 🌲 Authorize and fund an OMB investigation into violations of the Information Quality Act with respect to biased and unscientific information about the climate, biodiversity, and economic impacts of commercial logging on or in federal or federally facilitated web sites, publications, and other information disseminated by federal or state agencies.³⁴
- 🌲 Authorize and fund an SEC investigation into violations of Section 18 of the Securities Exchange Act of 1934 with respect to false and misleading claims about sustainability, climate and biodiversity impacts routinely made by publicly traded timber corporations in their SEC filings.
- 🌲 Repeal the forest bioenergy neutrality rider routinely attached to federal spending bills and instruct federal agencies to rescind policies supporting that assumption.
- 🌲 Amend the Federal Trade Commission green guides to prohibit claims of climate superiority from one broad product class over another since each product class is produced with a variety of techniques that may or may not represent climate gains over the competing product. This will help eliminate the unfair characterization of wood, regardless of practices at the source, as generating fewer GHG emissions than steel, concrete, bamboo, hemp or other non-wood alternatives.

How These Policy Reforms Will Help Meet Our International Pledges While Implementing the Government-wide Approach to Combat the Climate Crisis

Ending deforestation and forest degradation by 2030 – as called for by the Glasgow Leaders Declaration – is a tall order. But as the largest producer and consumer of wood products on the planet the US can play an outsized role in meeting this global ambition, first, by transforming the way domestic forestlands are managed, and then by helping to incentivize those practices elsewhere.

This policy roadmap presents ways federal, state, and local decision makers can intervene to slow and reverse the loss of forestlands to development and the degradation of forestlands by industrial logging practices. These options will not only help the US honor its Glasgow Leaders pledge but help achieve targets for several Sustainable Development Goals and other international agreements simultaneously. For example, SDG 1 (End poverty in all its forms) includes Target 1.4, addressing equal access to land ownership for poor and vulnerable communities and Target 1.5, addressing exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

While this policy roadmap is focused on forests, it is essential for achieving all of the important US goals for climate stability specified by EO 14008 – the US government-wide approach to combat the climate crisis. In particular, EO 14008 Section 201 sets six overriding goals the US will take on as a matter of policy to combat climate change. The policy interventions included in this roadmap will advance each of these goals:

Reduce climate pollution

Corporate logging practices are major sources of greenhouse gas emissions despite being excluded by existing GHG inventories. Updating GHG inventories to include the logging and wood products sector will provide an opportunity to reduce this source of climate pollution through a wide array of regulatory and market-based mechanisms identified in the policy roadmap. In addition, as with fossil fuels, major gains can be made by reducing demand for carbon intensive wood products.

Increase resilience to the impacts of climate change

Halting and reversing deforestation and degradation will help repopulate the land with bigger trees and older, more structurally complex forests that are far more resilient to climate change than industrial tree plantations.

Protect public health

The policy roadmap will help reduce public health hazards associated with corporate logging practices that are making the land more vulnerable to wildfires, heat waves, droughts, water shortages, water pollution, flooding, wind damage, invasive species and human exposure to novel diseases.

Conserve our lands, waters and biodiversity

The conservation of all primary and natural forests on federal lands as forest carbon reserves, refugia for native species and blueprints for forest recovery coupled with the designation of buffers and corridors to facilitate climate-related shifts in native species' habitat will take the US a long way towards achieving the "30x30" land conservation goal.

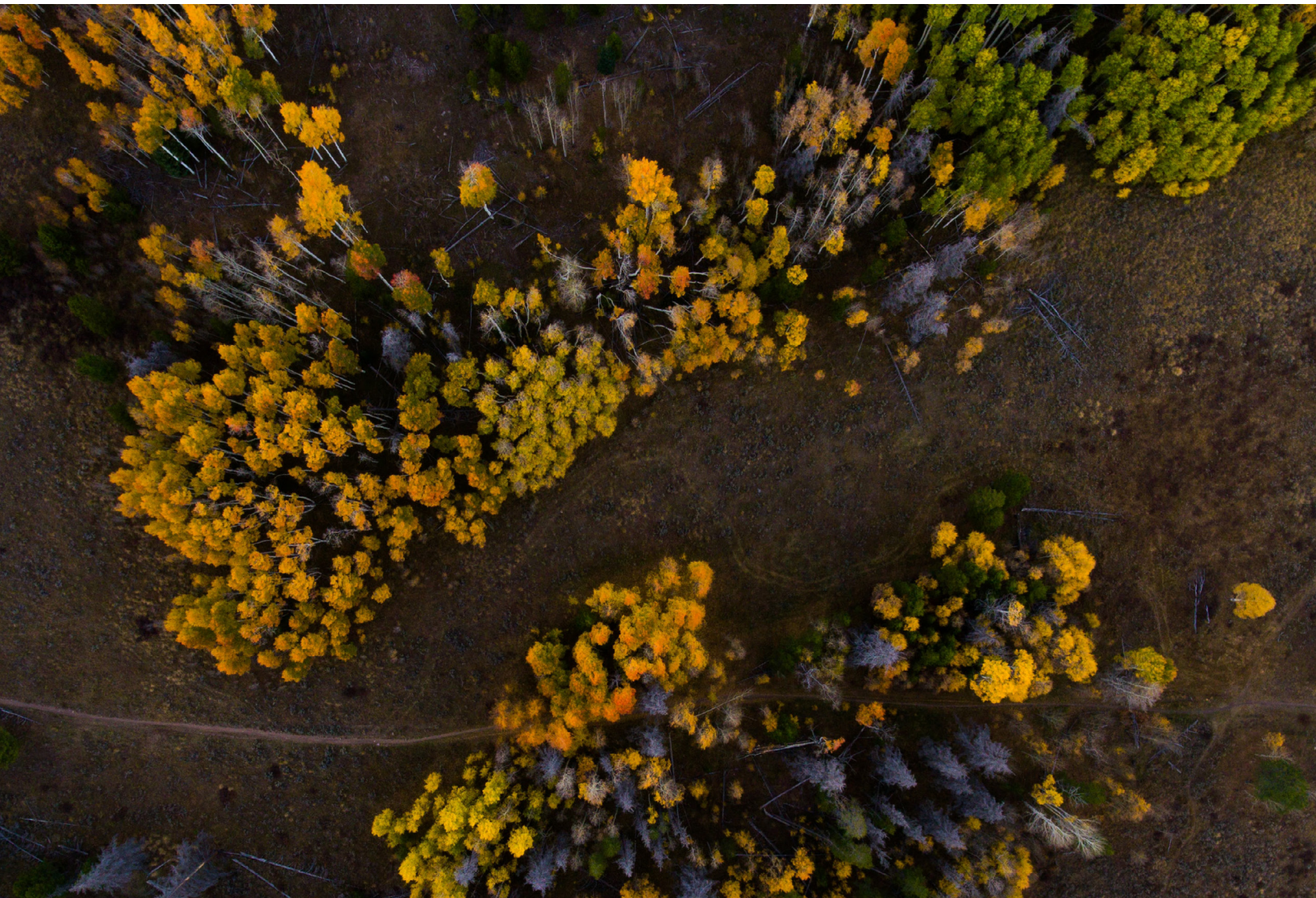
Deliver environmental justice

The public health hazards associated with corporate logging practices disproportionately affect low-income rural communities and, in the South, communities of color. These communities are also disproportionately represented in neighborhoods adjacent to industrial scale pulp, paper, and wood products facilities that emit fine particulates and volatile organic compounds that have been shown to cause cancer, asthma, and other lung diseases. Reducing the climate impacts of industrial practices and reducing wasteful consumption of wood products will help alleviate these environmental injustices.

Create jobs and spur economic growth

Rural in the US is strongly correlated with corporate logging activities that accelerate deforestation and forest degradation. This policy roadmap provides a way for rural communities to escape this 'resource curse' by getting more forestland into the hands of owners who are invested in the long-term prosperity of their communities. The policy roadmap also contains measures to generate tens of thousands of new jobs through forest protection and recovery.

The Forest Carbon Coalition and its partners look forward to working with members of Congress and the Biden Administration to promote this vision of ecological forest management throughout the United States and its territories.





ENDNOTES

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- 2 The USGS Gap project typology includes various levels of protection classified as Gap I, II, III and IV. Only Gap I lands and waters are permanently protected and managed for natural processes and biodiversity with little or no human stresses. An updated Gap status analysis for the US appears in Dreiss, L., Malcom, J. (2021). Identifying key federal, state, and private lands strategies for achieving 30x30 in the US. bioRxiv 2021.03.26.437234; doi: <https://doi.org/10.1101/2021.03.26.437234>.
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- 10 A copy of the pledge and current signatories can be found online at: https://www.politico.eu/wp-content/uploads/2021/11/02/20211007_Glasgow-Leaders-Declaration-on-Forests-and-Land-Use-1.pdf.
- 11 SDG target 1.2 states: "By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions." Given the high concentration of rural poverty in deforested and degraded areas and the high correlation with industrial logging, reforming US forest policy is critical to meeting this target.
- 12 USDA Forest Service, 2023. Forest Products Cut and Sold from the National Forests and Grasslands. Available online at: <https://www.fs.usda.gov/forestmanagement/products/cut-sold/index.shtml>.
- 13 Hanson, C., Talberth, J., 2021. Running Backwards: Logging provisions in the infrastructure and budget reconciliation packages would worsen the climate crisis and threaten public health. Ridgecrest, CA: John Muir Project and Center for Sustainable Economy. Available online at: <https://irp.cdn-website.com/0358d1eb/files/uploaded/Version-2.0-JMP-ReportRFS.pdf>.
- 14 Hanson, C., DellaSala, D., Hansen, J.E., et al. (2021). Open Letter to President Biden and Members of Congress from Scientists: It is essential to Remove Climate-Harming Logging and Fossil Fuel Provisions from Reconciliation and Infrastructure Bills. Available online at: https://johnmuirproject.org/wp-content/uploads/2021/11/ScientistLetterOpposingLoggingProvisionsInBBB_BIF4Nov21.pdf.
- 15 Popkin, G., 2022. There's a Booming Business in America's Forests. Some Aren't Happy About It. *New York Times*, 11/15/22. Available online at: <https://www.nytimes.com/2021/04/19/climate/wood-pellet-industry-climate.html>.
- 16 Muhammad, A., 2023. US Wood Pellet Exports Continue to Reach Record Levels. *Southern Ag Today*, 2/8/23, available online at: <https://southernagtoday.org/2023/03/08/u-s-wood-pellets-exports-continue-to-reach-record-levels/>.
- 17 Global tree cover loss statistics are available from Global Forest Watch at <https://www.globalforestwatch.org>. Between 2001 and 2020, GFW data indicate that over 104 million acres have been affected by tree cover loss.

18 For an overview of efforts to expand the compensatory mitigation program for wetlands to other at-risk natural areas, see Hayes, D., Gentile, N. (2016). No Net Loss. How Mitigation Policy Can Spur Private Investment in Land and Wildlife Conservation. Washington, DC: Center for American Progress. Available online at: <https://www.americanprogress.org/issues/green/reports/2016/11/01/291509/no-net-loss/>. See also Maryland's no-net-loss policy for forests: <https://dnr.maryland.gov/forests/Documents/nonetlossfinalreport.pdf>.

19 Many units of the federal forest system have already identified strategies and projects to advance a holistic forest recovery agenda yet are severely constrained by inadequate investment. For example, at existing levels of funding it will take up to a half century to meet the US Forest Service's goal of restoring up to 300,000 miles of obsolete logging roads. See: Smith, J. (2017). Mile by Mile. Ten Years of Legacy Roads and Trails Success. Washington, DC: The Wilderness Society.

20 Existing forest planning regulations already require landscape-level planning for connectivity, yet the Forest Service has yet to implement this mandate. Connectivity is defined as "[e]cological conditions that exist at several spatial and temporal scales that provide landscape linkages that permit the exchange of flow, sediments, and nutrients; the daily and seasonal movements of animals within home ranges; the dispersal and genetic interchange between populations; and the long-distance range shifts of species, such as in response to climate change." 36 CFR 219.19.

21 See, e.g. Lindenmayer, D.B., Noss, R.F. (2006). Salvage logging, ecosystem processes and biodiversity conservation. Conservation Biology 20(4): <https://doi.org/10.1111/j.1523-1739.2006.00497.x>; Ingalsbee, T. (2017). Whither the paradigm shift? Large wildland fires and the wildfire paradox offer opportunities for a new paradigm of ecological fire management. International Journal of Wildland Fire 26: 557-561.

22 The federal timber sale program costs taxpayers over \$2 billion per year, including fire suppression costs attributable to protecting the timber resource for future sales. Talberth, J., Niemi, E. (2018). Environmentally harmful subsidies in the U.S.: Issue #1 - the federal logging program. Portland, OR: Center for Sustainable Economy. Available online at: <https://irp.cdn-website.com/0358d1eb/files/uploaded/CSE-Federal-logging-report-May-2019.pdf>. The jobs multiplier for labor intensive recovery projects has been estimated by University of Oregon's Ecosystem Workplace Program to be roughly 24 jobs per million invested.

23 Council on Environmental Quality. 2013. [Updated Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies](#).

24 Exports of raw hardwood logs has more than doubled since 1990. See Luppold, W., Bumgardner, M., Jacobson, M., 2022. An analysis of US hardwood exports from 1990 to 2021. Forest Prod. J. 72(3):198-206. doi:10.13073/FPJ-D-22-00035.

25 The SEC is currently taking public input from investors, registrants, and other market participants on climate change disclosure. EO 14008 provides an opportunity to strengthen disclosure requirements to ensure that risks associated with logging corporations are addressed. See: <https://www.sec.gov/news/public-statement/lee-climate-change-disclosures>.

25 Hickman, C. (2007). TIMOs and REITs. Situation brief. Washington, DC: USDA Forest Service Research and Development.

26 Due to an aging family forestland owner population, there will be a major shift in US forest ownership over the next decade. Whether this land ends up in the hands of corporations or families depends on making conservation attractive for the next generation of family owners. See, e.g. Markowski-Lindsay, M., Catanzaro, P., Milman, A., Kittredge, D. (2016). Understanding family forest land ownership and use: exploring conservation bequest motivations. Small Scale Forestry 15: 241-256.

27 The National Agricultural Law Center provides an overview of corporate farming laws and how they have survived legal challenges here: <https://nationalaglawcenter.org/research-by-topic/corporate-farming-laws/>.

28 Greene, J. (2020). How Much Timber Does the US Harvest and How is it Used. FOREST2MARKET, available online at: <https://www.forest2market.com/blog/how-much-timber-does-the-us-harvest-and-how-is-it-used>.

29 The US EPA provides a helpful compilation and comparison of building code reform options for state and local governments here: <https://www.epa.gov/smartgrowth/green-building-standards>. Size limits and materials sourcing are covered by many of these.

30 Talberth, J., Davis, S., Olson, L. (2021). The Climate Impacts of Industrial Forest Practices in North Carolina. Part II: Climate Resiliency. Asheville, NC: Dogwood Alliance and Center for Sustainable Economy. Available online at: <https://www.dogwoodalliance.org/wp-content/uploads/2021/02/Forest-Carbon-Report-2-web-res.pdf>. See also Bradley, C.M. et al., note 5.

31 Legislation establishing a model forest carbon tax and reward program in Oregon was drafted during the 2017 legislative session. Read LC 2875 here: https://irp.cdn-website.com/0358d1eb/files/uploaded/LC2875_DRAFT_2017_Regular_Session.pdf.

32 For what has/is being done on fossil fuel subsidies in response to EO 14008, see Bertrand, S., 2021. Fact sheet: Proposals to Reduce Fossil Fuel Subsidies. Washington, DC: Environment and Energy Study Institute. Available online at: <https://www.eesi.org/papers/view/fact-sheet-proposals-to-reduce-fossil-fuel-subsidies-2021>.

33 Among these claims are that logging is needed to reduce wildfire risk, create more early successional habitat, replace more carbon intensive goods, enhance carbon sequestration and help sustain the rural economy. The preponderance of scientific and economic evidence finds the opposite.

34 For example, this USDA website (<https://www.fs.usda.gov/ccrc/topics/carbon-benefits-wood-based-products-and-energy>) promotes the idea that more logging and more wood products in use is a climate benefit without recognizing that for every metric ton of carbon stored in wood products many more are released throughout the value chain of producing that ton. Including this information would nullify the website's implications that wood is more climate friendly than concrete, steel or other substitutes.

35 A list of SDG 1 (End poverty in all its forms) targets are available online at: <https://www.un.org/sustainabledevelopment/poverty/>.





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