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U.S. Department of the Interior
Director Tracy Stone-Manning
Bureau of Land Management
1849 C Street NW, Room 5646
Washington, DC 20240

Comment on the Proposed Rulemaking for Conservation and Landscape Health

Leading climate and biodiversity experts recently concluded that we must tackle the intertwined Climate and Biodiversity Crises simultaneously to protect a livable future for all of earth's inhabitants[1] including the creatures we share the Earth with. This amounts to changing how we look at Nature and breaking away from destructive ideas about economic progress.[2] We must stop subsidizing activities that harm biodiversity. This must in particular include jettisoning the destructive notion that we must convert forests to tree plantations on short harvest cycles to maximize timber production. To this end, **ALL Mature and Old-Growth Forest must be immediately and permanently protected.**

Reading the current news about Canadian wildfires now burning 1,597% of the average area to date[3] along with news of the lowest recorded extent of sea ice in Antarctica "in excess of 2.5 million sq. km (965,255 sq. miles) below average for the time of year[4]" completely validates the absolute necessity to halt carbon emissions. Carbon must also remain sequestered to refrain from adding even more emissions to the atmosphere. Greenhouse gas emissions from the energy industry continued to increase last year despite record growth in wind and solar power with fossil fuels continuing to make up 82% of the world's total energy consumption in 2022 as the world used more energy overall.[5]

> "To halt global warming, the emission of carbon dioxide into the atmosphere by human activities such as fossil fuel burning, cement production, and deforestation needs to be brought all the way to zero. The longer it takes to do so, the hotter the world will get. Lack of progress towards decarbonization has created justifiable panic about the climate crisis.[6]"

The sharp increase in north Atlantic surface temperatures over the past three months has prompted fears among veteran climate scientists that the world's climate has entered a more erratic and dangerous phase with the advent of an El Niño event exacerbating human-made global heating.[7] The 1.5°C limit adopted in the Paris Agreement of 2015 is expected to be breached in at least one year between 2023 and 2027.[8]

So we must act.

Forests

On his first day in office, President Biden signed an order to rejoin the Paris Agreement declaring climate change a "global, existential crisis.[9]" The Agreement calls for a 50 percent reduction in Greenhouse Gas (GHG) emissions by 2030 and achieving net-zero emissions by 2050.[10] A week after his inauguration, President Biden also issued Executive Order 14008 pledging "to achieve the goal of conserving at least 30 percent of our lands and waters by 2030.[11]"

Last year on Earth Day, April 22, 2022, the Biden Administration issued Executive Order 14072 directing the Secretary of the Interior, with respect to the Bureau of Land Management (BLM) and the Forest Service branch of the U.S. Department of Agriculture, to "define, identify, and complete an inventory of old-growth and mature forests on Federal lands" within one year.[12] This year in time for Earth Day, the Mature and Old-Growth Forest Report[13] was released identifying 32.7 million acres of old-growth forest and 80.1 million acres of mature forest on BLM and Forest Service lands.

The old-growth forests identified amount to only 4 percent of the over 800 million forested acres in the US.[14] Adding the mature forest land identified, the sum of mature and old-growth forest in both BLM lands and National Forests encompasses less than 14 percent of forested land while more than half of US forests are privately owned.[15] Mature and old-growth forests hold the promise of helping address the climate, biodiversity and water crises that confront us by sequestering the carbon from CO_2 emissions[16], conserving habitat for wildlife[17,18] and regulating the water cycle.[19]

It is imperative that the 20,957,146 acres of mature and old-growth forest on the lands managed by the BLM be completely protected and preserved. Beyond the 2050 goal of net-zero GHG emissions, atmospheric CO_2 levels thereafter need to be reduced to 350 parts per million or less to stay within the safe climate zone for human civilization. Trees are the major known method currently capable of capturing CO_2 from the atmosphere at the scale required without the need for any additional energy. Globally forests absorb about 30 percent of all CO_2 emissions from fossil fuel burning and net deforestation and store large reservoirs of carbon, together holding more than double the amount of carbon in the atmosphere.[20]

> "Despite regional negative effects of climate change on the net amount of carbon removed from the atmosphere annually by land ecosystems, their removal of carbon dioxide from the atmosphere has remained fairly constant over the last 60 years at about 31% of emissions, with **forests contributing the most.**[21]" (emphasis added)

Reversing the degree to which forests have been removed and degraded globally actually provides a tremendous potential for addressing climate warming through proforestation and reforestation should decarbonization be achieved.

> "(I)n the Pacific northwest USA, an analysis of inventory and remote sensing data indicated that the current carbon storage on forest land is half of the potential, and it could increase by 15% over the next several decades if allowed to grow and accumulate carbon. This can potentially result in hundreds of additional years of forest carbon accumulation.[22]"

Additionally,

> "(E)cosystem services accrue as forests age for centuries. Far from plateauing in terms of carbon sequestration (or added wood) at a relatively young age as was long believed, older forests (e.g., >200 years of age without intervention) contain a variety of habitats, typically continue to sequester additional carbon for many decades or even centuries, and sequester significantly more carbon than younger and managed stands. (T)emperate forests in particular have the highest CO2 removal rates and overall biological carbon sequestration.
>
> In sum, proforestation provides the most effective solution to dual global crises — climate change and biodiversity loss.[23]"

When trees are logged, over 84 percent of the carbon they contain is released back up to the atmosphere and across the United States approximately 1% may remain in products in use and 13% in landfills at 100 years post-harvest.[24] Furthermore the "thinning" of forests to provide feedstock for the production of wood pellets for energy production is also highly problematic.

> "In the case of forest timber turned into wood pellets for bioenergy use, the IPCC… indicates that the process produces higher CO2 emissions than fossil fuels for decades to centuries. The burning of wood pellets emits much higher levels of carbon than if the wood was left to decay in the forest because the harvesting, transport, processing, and burning of wood all emit carbon dioxide. Due to the inefficiencies of biomass energy, bioenergy power plants emit approximately 65 percent more CO2, per MWH than modern coal plants, and approximately 285 percent more than natural gas combined cycle plants.[25]"

The accounting for soil carbon emissions is not yet established but it is understood that damage to the soil from the use of heavy equipment in logging activities causes the sequestered carbon to oxidize and become volatile increasing the total levels of CO_2 emitted to the atmosphere from these activities.

Soils

The world's soils store more carbon than is present in biomass and in the atmosphere.[26] Biological soil crusts, or biocrusts, are communities of living organisms growing on the soil surface in arid and semi-arid ecosystems much of which is managed by the BLM.

> "Biocrusts perform important ecological roles including carbon fixation, nitrogen fixation and soil stabilization; they alter soil albedo and water relations and affect germination and nutrient levels in vascular plants. They can be damaged by fire, recreational activity, grazing and other disturbances and can require long time periods to recover composition and function. Biological soil crusts are also known as cryptogamic, microbiotic, microphytic, or cryptobiotic soils. Estimates of total net carbon uptake by crusts globally are ~3.9 Pg/year (2.1-7.4 Pg/year).[27]"

Analysis of previously published data derives a nitrogen uptake by biocrusts of 49 Tg per year, accounting for nearly half of the biological nitrogen fixation on land. Nitrogen fixation by biocrusts may be crucial for carbon sequestration by plants.[28]

Biocrust is especially widespread in the deserts of the southwestern United States as the ecosystem engineer of drylands. Biocrust provides important services by stabilizing desert soil and preventing it from blowing away. In this way, biocrust is nature's safeguard against dust storms that threaten human health and wildlife. By taking in carbon and nitrogen boosting fertility, biocrusts play a valuable role in the diversity and productiveness of desert soils that sustain plants and wildlife. Biocrust also increases the ability of soils to retain water during the monsoon seasons, a critical process for the entire desert ecosystem. However biocrust is fragile. Once damaged by humans or animals, the delicate crust can take hundreds of years to recover.

In Conclusion —

The Bureau of Land Management oversees many acres of forest and rangelands that are crucial for potentially stabilizing the Earth's climate. U.S. forests have the potential for much more rapid atmospheric CO_2 removal rates and biological carbon sequestration by intact and/or older forests than younger forests. Growing existing forests to their biological carbon sequestration potential optimizes CO2 removal while limiting climate change and protecting biodiversity, air, land, and water with natural forests being by far the most effective method for achieving these multiple goals.[29]

It is imperative that rulemaking for the forests identified in the Mature and Old-Growth Forest Report be crafted to immediately and completely protect and preserve these forests from any form of logging and/or "thinning". In addition, the rules must be crafted to ensure more forest acreage is recruited into these categories. Harvesting in old-growth forests releases CO2 that has taken centuries to accumulate — carbon that, once lost, is irrecoverable in our lifetime.[30]

Furthermore, biocrusts are the keystone element of the landscape in the desert Southwest. The biocrusts that protect the lands used for grazing are fragile and easily damaged from the force of cattles' steps. Much of the land used for cattle grazing has been seriously degraded. Loss of the biocrust creates major impacts on the carbon sequestration, soil stability, vegetation and wildlife of the entire region.

Including the inventoried mature and old-growth forests on BLM managed land along with a significant portion of managed rangeland would be a good start for fulfilling the Executive Order 14008 pledge of conserving 30 percent of land by 2030.

Thank you for your attention,

Frank Toriello
President
We Advocate Thorough Environmental Review (W.A.T.E.R.)

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