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Comments: We need to stop all logging in our federal and state forests and allow them to reach their maximum potential for carbon removal and storage to best combat the climate crisis we are in. Logging for forest products can be done in on privately owned land. Logging for fire prevention or insects only compounds the problems with these issues. Older unmanaged forests are best at reducing and mitigating damage from fires and insects.

Forests-when allowed to grow old, uncut and wild-are a leading natural and free solution to remove and store harmful greenhouse gases from the atmosphere. (See references to scientific evidence below) Preserving and protecting older trees and forests is more important than providing replacement trees because it takes many years for replacement trees to be capable of providing the same ecoservices.

Forests help to promote and protect wetlands, which are also of critical importance in carbon sequestration. Forests and trees create balanced and clean freshwater distribution and storage, helping produce normal rainfall, underground aquifers, and natural rivers. Forests and urban trees absorb stormwater and reduce flooding. Large tracts of permanently protected forests can significantly reduce hurricanes, tornados, and flooding through the global water cycles they create.

Forests and trees cool the temperature on land, acting like natural air conditioners, both in rural and urban areas. Mature and old-growth forests provide the best habitat for wildlife biodiversity. The specific species that benefit from early seccessional forest habitats will thrive in private forests (79% of Massachusetts forests) where logging can continue. Forests and urban trees also promote human physical and mental health.

Logging forests releases most of the carbon stored in the forest structures (bark, trunks, branches, etc.) and forest soils as damaging greenhouse gases (GHG), so logging forests to site solar panels is not green. There are many already cleared areas available to site much-needed solar panels without creating more GHG emissions. After the extraction and processing required to create wood products, only a small portion of a tree's original carbon (18%) is stored long term. Biomass energy, created by burning wood from trees, is more polluting at the smokestack than coal. Logging kills the soil organisms, destroys wetlands, compacts the soil, kills the wildlife, allows inroads for insects and invasive species, and disrupts the natural cycles of growth, death, and recycling of the natural resources that promote the best health of the forest. Repeated logging weakens forest health and resilience.

For scientific references about forests and trees, please see:

* David Ellison et al. 2017, "Trees, forests and water: cool insights for a hot world" -

<https://www.sciencedirect.com/science/article/pii/S0959378017300134>

* William R. Moomaw et al 2019, "Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good" <https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full>

* Michael J. Kellett et al. 2023, "Forest-clearing to create early-successional habitats: Questionable benefits, significant costs" <https://www.frontiersin.org/articles/10.3389/ffgc.2022.1073677/full>

The following statements from a report by more than 200 scientists argue that the world's forests have the potential to store up to 338 gigatons of carbon but stress that they can only act as carbon sinks if they are adequately restored and protected.

Mo, L., Zohner, C.M., Reich, P.B. et al. Integrated global assessment of the natural forest carbon potential. *Nature* 624, 92-101 (2023). <https://doi.org/10.1038/s41586-023-06723-z>

At present, global forest carbon storage is markedly under the natural potential, with a total deficit of 226?Gt

(model range = 151-363 Gt) in areas with low human footprint. Most (61%, 139 Gt C) of this potential is in areas with existing forests, in which ecosystem protection can allow forests to recover to maturity. The remaining 39% (87 Gt C) of potential lies in regions in which forests have been removed or fragmented. Although forests cannot be a substitute for emissions reductions, our results support the idea that the conservation, restoration and sustainable management of diverse forests offer valuable contributions to meeting global climate and biodiversity targets.

The continuing climate and biodiversity crises threaten ecosystems and human society. Representing 80-90% of the global plant biomass¹ and much of Earth's terrestrial biodiversity¹², forests play a key role in both climate-change mitigation and adaptation. So far, humans have removed almost half of Earth's natural forests^{13,14}, and we continue to lose a further 0.9-2.3 Gt C each year (about 15% of annual human carbon emissions) through deforestation¹⁵.

Up to 80% of the world's forests are secondary systems that have undergone anthropogenic degradation²⁶ (Potapov, P. et al. The last frontiers of wilderness: tracking loss of intact forest landscapes from 2000 to 2013. *Sci. Adv.* 3, e1600821 (2017).

Our models corroborate these findings, revealing a considerable potential for carbon capture in existing forests by allowing these degraded ecosystems to regenerate to maturity. The difference between current and potential ecosystem carbon stocks amounts to 139 Gt C (108-228 Gt C) in existing forests, representing 61% of the total difference when excluding urban and agricultural areas (Table 1). Of the total 139 Gt, 11 Gt (8%) can be attributed to biomass loss in existing forest plantations, in which restoring diverse ecosystems could lead to further carbon capture. The remaining 128 Gt can be attributed to human degradation in other forest ecosystems. These findings highlight the importance of forest conservation for carbon capture, as ecosystems are allowed to recover to their mature states. It suggests that a substantial proportion of carbon capture can be achieved with minimal land-use conflicts

13. Crowther, T. W. et al. Mapping tree density at a global scale. *Nature* 525, 201-205 (2015).

14. Olagunju, T. E. Impacts of human-induced deforestation, forest degradation and fragmentation on food security. *N. Y. Sci. J.* 8, 4-16 (2015).

15. Friedlingstein, P. et al. Global carbon budget 2020. *Earth Syst. Sci. Data* 12, 3269-3340 (2020).

Please stop logging all federal and state forests and allow them to grow old unmanaged so we may benefit from their maximum potential to drawdown and store carbon and provide all their other critical life promoting services.