Question: Does cutting trees release their carbon into the atmosphere?

Answer: No, this is false.

The carbon in trees is not emitted when they're cut. When trees are harvested for wood products, the carbon within them is preserved in these products and remains stored, not released into the atmosphere.

Forest Management and Wood Products: A Sustainable Carbon Solution

1. **Carbon Sequestration:** Trees absorb CO2 from the atmosphere, converting about 50% of their weight into stored carbon in wood through photosynthesis.(1) As trees grow, they accumulate more stored carbon.

2. **Carbon Lock-In:** Harvested trees retain their stored carbon, and cutting a tree does not release carbon into the atmosphere unless the wood decays or burns.

3. **Age-Related Carbon Storage:** Older forests absorb and store less carbon per acre as they age and grow more slowly compared to younger forests. Older forests are more prone to releasing carbon because of disease, decay, and forest fires.(2)

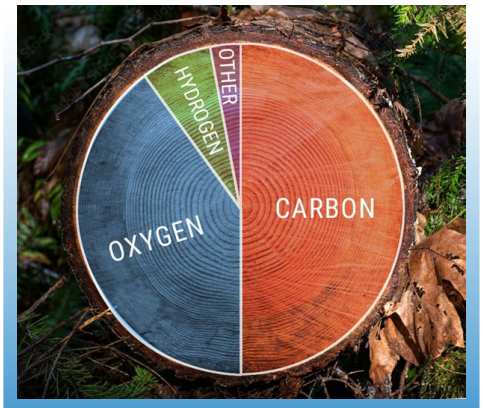
4. **Transfer to Built Environment:** Harvesting trees for wood products shifts forest carbon into the built environment, aiding carbon sequestration through a cycle of growth, harvesting, wood use, and replanting.

5. **Carbon Offsetting:** Managed forests effectively offset carbon emissions. For instance, private forestlands in Washington state offset 12% of the state's total annual carbon emissions through tree growth and wood utilization.(3)

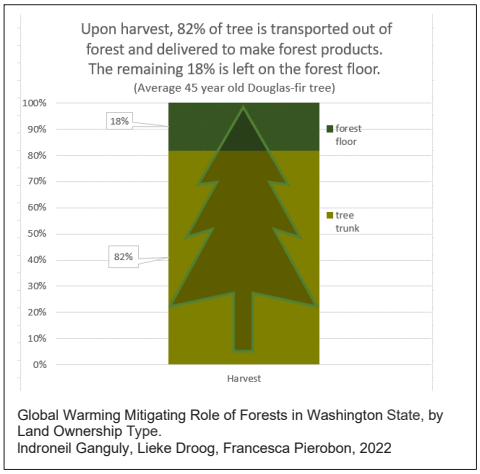
6. **Efficiency:** Modern forestry practices ensure 82% of harvested tree trunks are used for making forest products, while the remaining 18% replenishes soil nutrients or contributes to biomass energy, reducing reliance on carbon-intensive fossil fuels.

7. **Long-Lived Wood Products:** About 53% of a tree's carbon, such as in a 45-year-old Douglas-fir, ends up in durable wood products like lumber and poles, allowing long-term carbon storage.

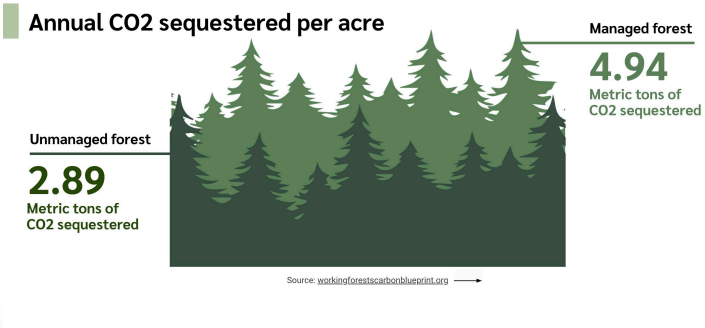
8. **Substitution Effect:** Wood products, when used in construction, ofter replace more energy intensive materials like concrete and steel, amplifying the carbon benefits of using wood.



The dry weight of tree wood is composed mostly of solid carbon which remains in this solid stored state until the wood decays or is destroyed by burning.



Global Warming Mitigating Role of Forests in Washington State, by Land Ownership Type.
Indroneil Ganguly, Lieke Droog, Francesca Pierobon, 2022



On average, managed forests absorb carbon 2x faster and store 3x more carbon per acre each year in both forests and wood products compared to unmanaged USFS forestland. (3)

WFPA

1 Source: https://www.janickilogging.com/carbon-capture-forestry, accessed 1/27/23
2 Source: https://sage-advices.com/how-do-trees-remove-carbon-dioxide-from-the-atmosphere-what-happens-to-it/, accessed 1/28/23
3 Ganguly I, Pierobon F, Sonne Hall E. Global Warming Mitigating Role of Wood Products from Washington State's Private Forests. Forests. 2020; 11(2):194. https://doi.org/10.3390/f11020194