

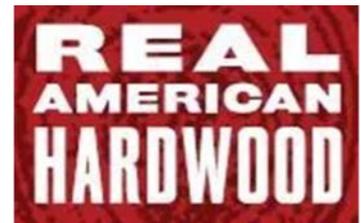
# PENNSYLVANIA FOREST PRODUCTS ASSOCIATION



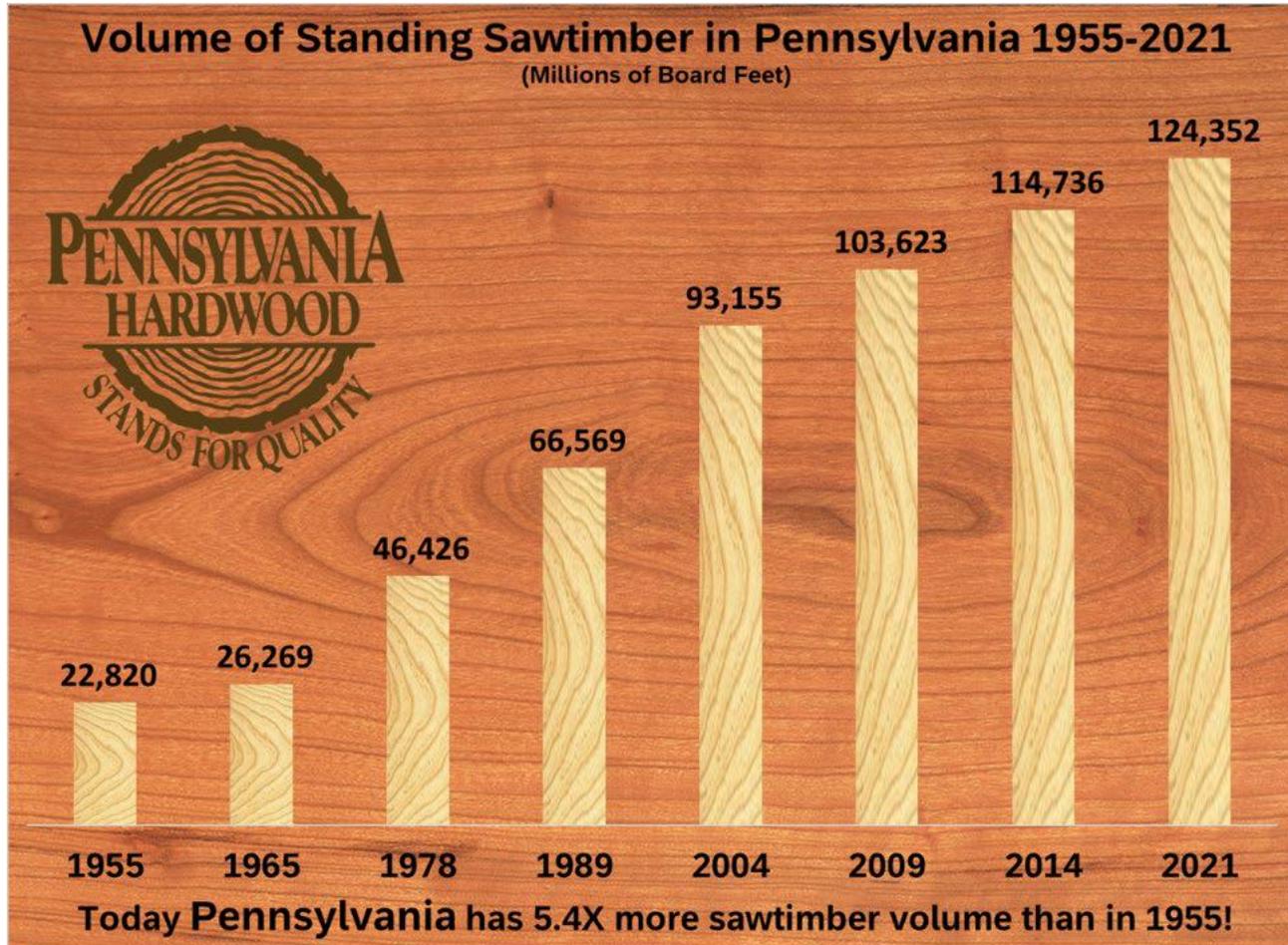
## Pennsylvania's Forest Products Supply Chain: Carbon Benefits and Promotion Efforts



*Matt Gabler, Executive Director  
Pennsylvania Forest Products Association  
Goddard Forestry Forum  
October 2024*



# Standing Timber Volume in Pennsylvania



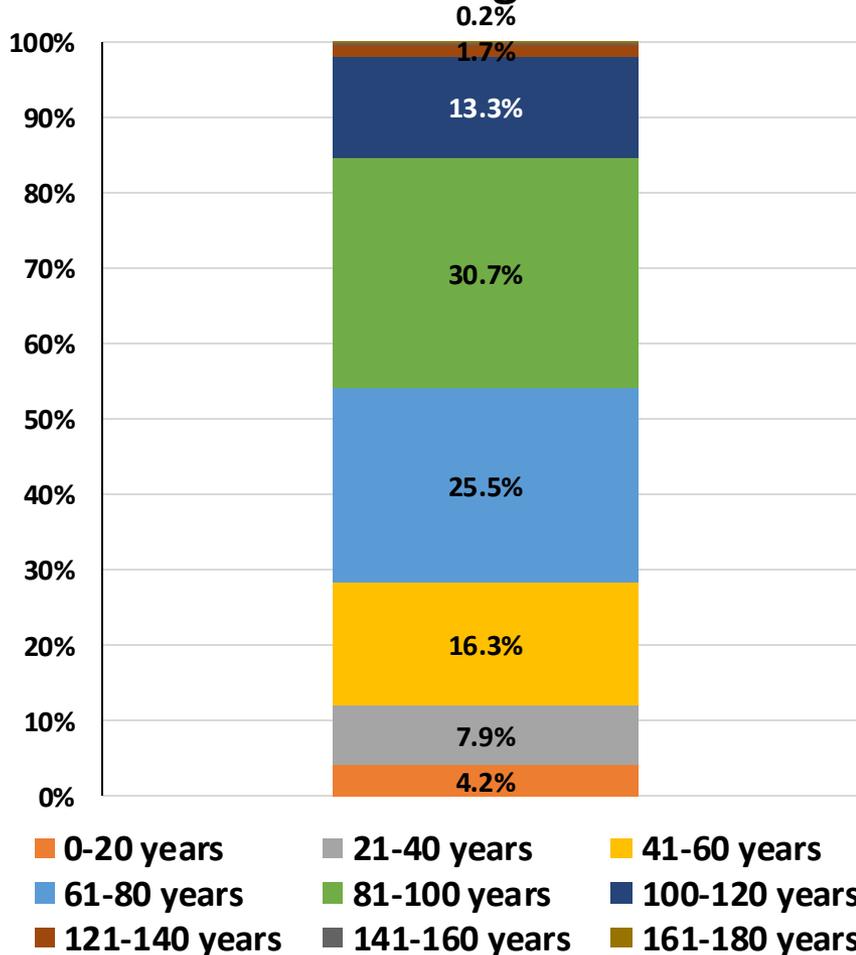
## Annually

- 3-4 Billion BDFT growth
- 1 Billion BDFT harvested
- **0.5 - 1 Billion BDFT mortality**
- 2 Billion BDFT **NET GROWTH**

Source: USDA Forest Inventory & Analysis Data; compiled by PA Department of Agriculture

# Pennsylvania's Forest Age Distribution

## Timberland Age Distribution

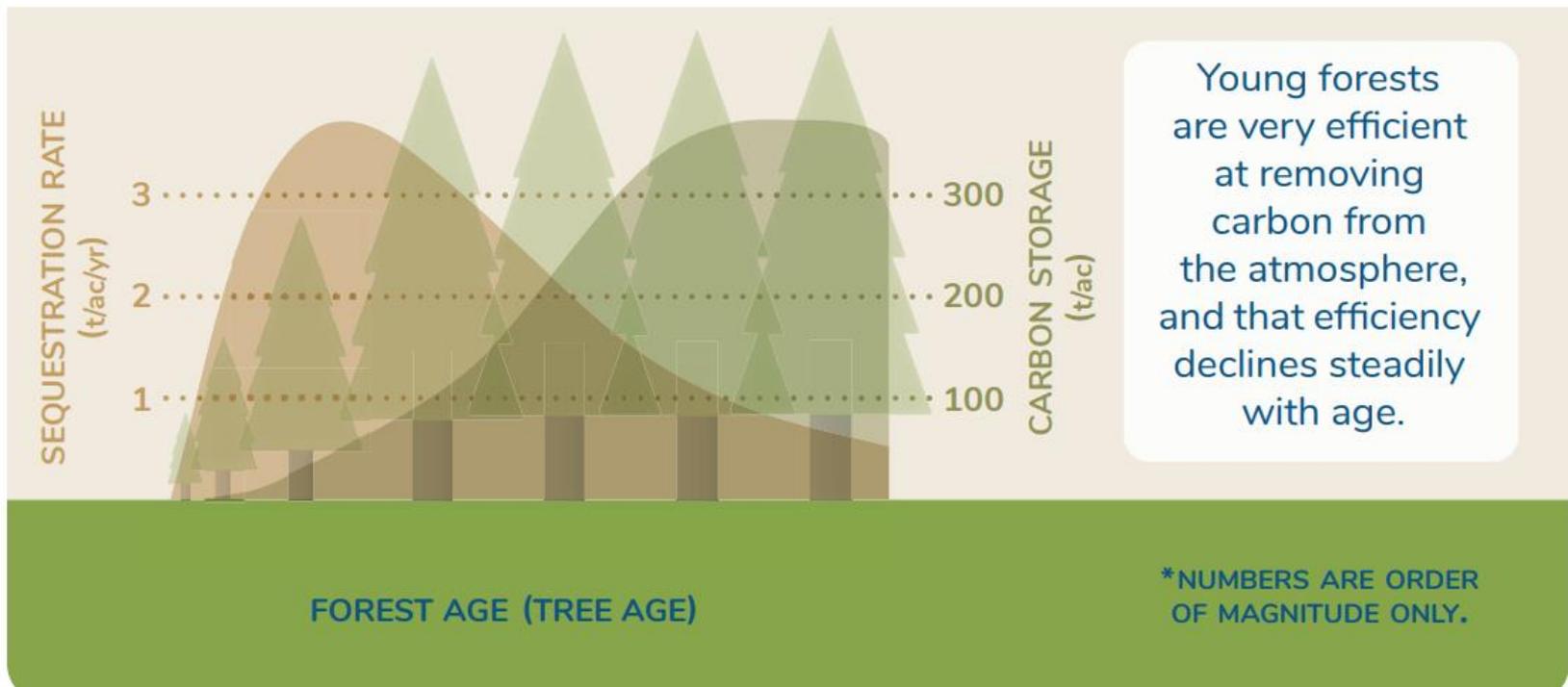


- Over 71% is over 60
- Nearly 50% over 80
- About 12% is under 40

Source: USDA Forest Inventory & Analysis Data;  
compiled by PA Department of Agriculture

# Carbon Sequestration and Storage Over Time

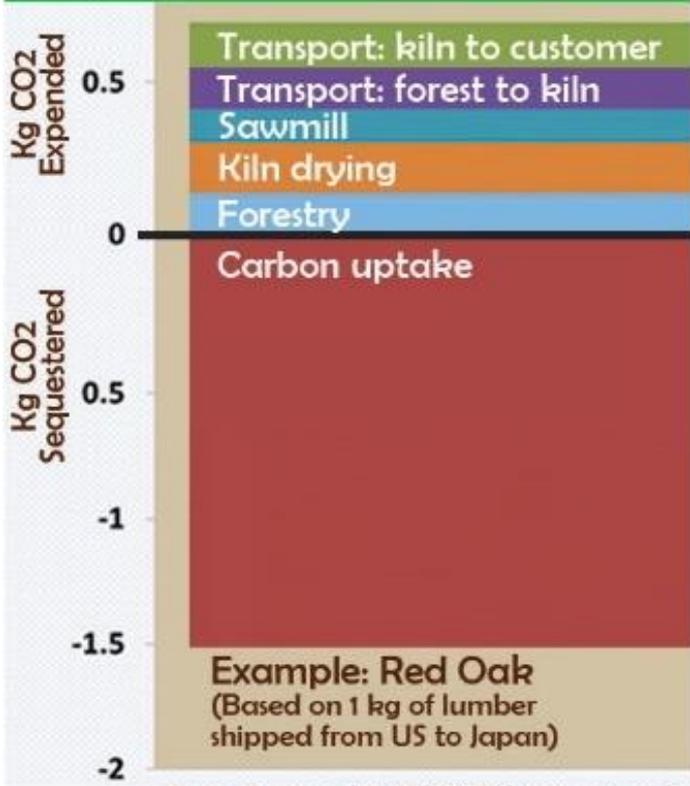
## SEQUESTRATION RATE AND CARBON STORAGE OVER AGE\*



Source: National Clean Air & Streams Institute (NCASI)

# Net Carbon Impact of Wood Products

## All Wood Species are Carbon Negative



Data Source: AHEC/PE International

## Wood is the Greenest Building Material

### Carbon Emissions and Storage Compared to Lumber:

	Total Process Emissions*	Emissions + Carbon Storage*
Lumber	0.033	-0.457 carbon negative
Concrete	1.1 x lumber	+0.034 carbon positive
Brick	2.6 x lumber	+0.088 carbon positive
Glass	4.6 x lumber	+0.154 carbon positive
Recycled Steel	6.6 x lumber	+0.220 carbon positive
Cement	8.0 x lumber	+0.265 carbon positive
Recycled Alum	9.4 x lumber	+0.309 carbon positive
Steel	21.0 x lumber	+0.694 carbon positive
Plastic	75.8 x lumber	+1.500 carbon positive
Aluminum	137.2 x lumber	+4.529 carbon positive

\*Tons of CE/ton of product

Data Source: Dovetail Partners, Inc.

# Carbon Benefits of Forest Products

<b>Increased Carbon Storage / Sequestration</b>	<b>Decreased Carbon Emissions</b>
Forest Products are carbon negative	Decreased use of competing carbon-positive materials
Forest management enables young forests to replace old forests; enhancing carbon sequestration	Low grade biomass energy is carbon-neutral and can displace carbon-positive energy sources.

# Promoting Carbon Benefits of Forest Products

**REAL  
AMERICAN  
HARDWOOD**

## The Carbon Cycle

1  
2  
3  
4

Growing trees remove carbon dioxide from the atmosphere and separate the carbon and oxygen atoms. They return the oxygen to the air, and use just the right amount of carbon to grow a trunk, branches, and leaves. This process reduces greenhouse gasses in the atmosphere.

# Promoting Carbon Benefits of Forest Products

**REAL AMERICAN HARDWOOD**

**Carbon Absorbed**

02 Carbon Cycle

1

2

3

4

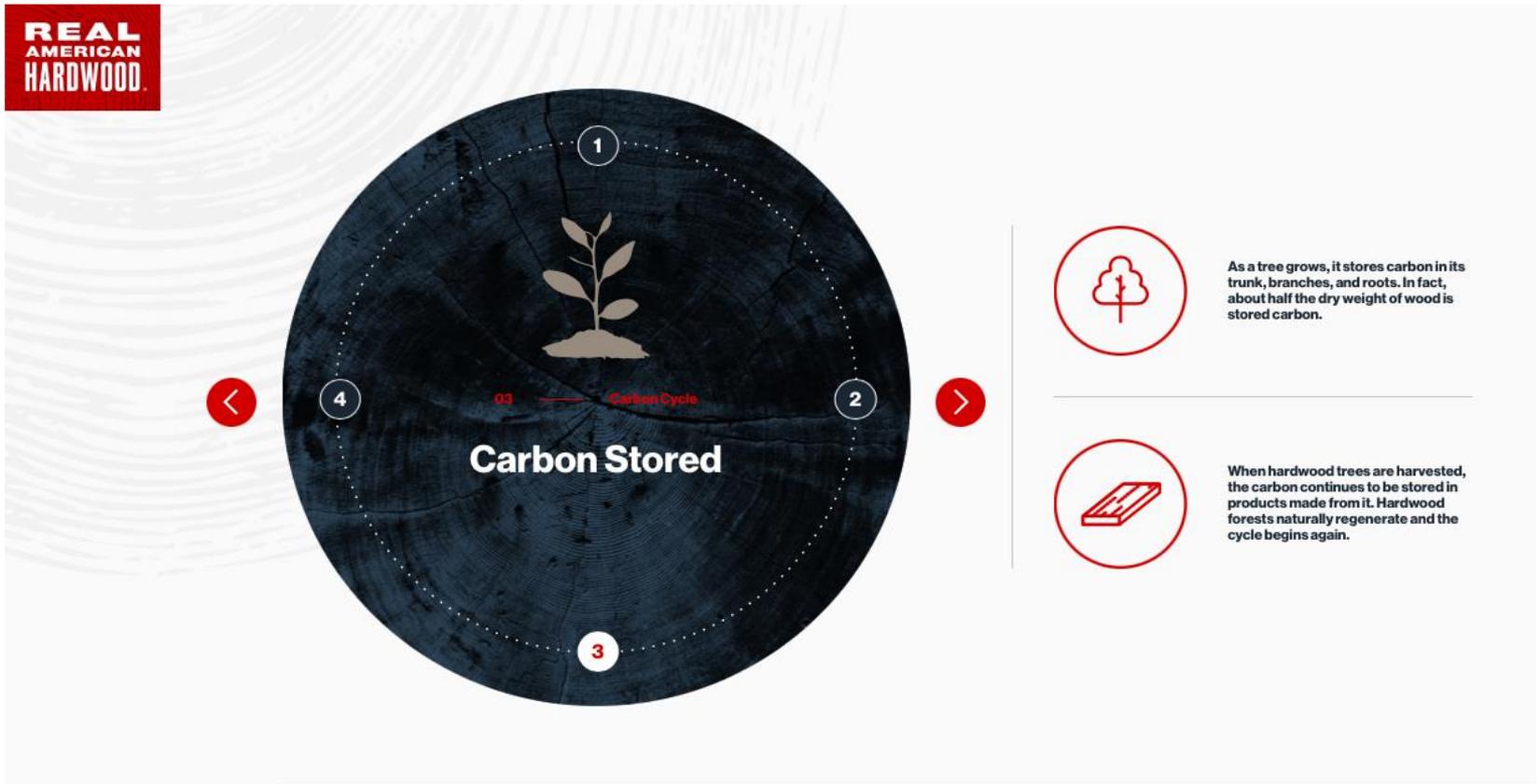
Young, healthy forests absorb carbon more rapidly than older, dense forests.

$O_2$

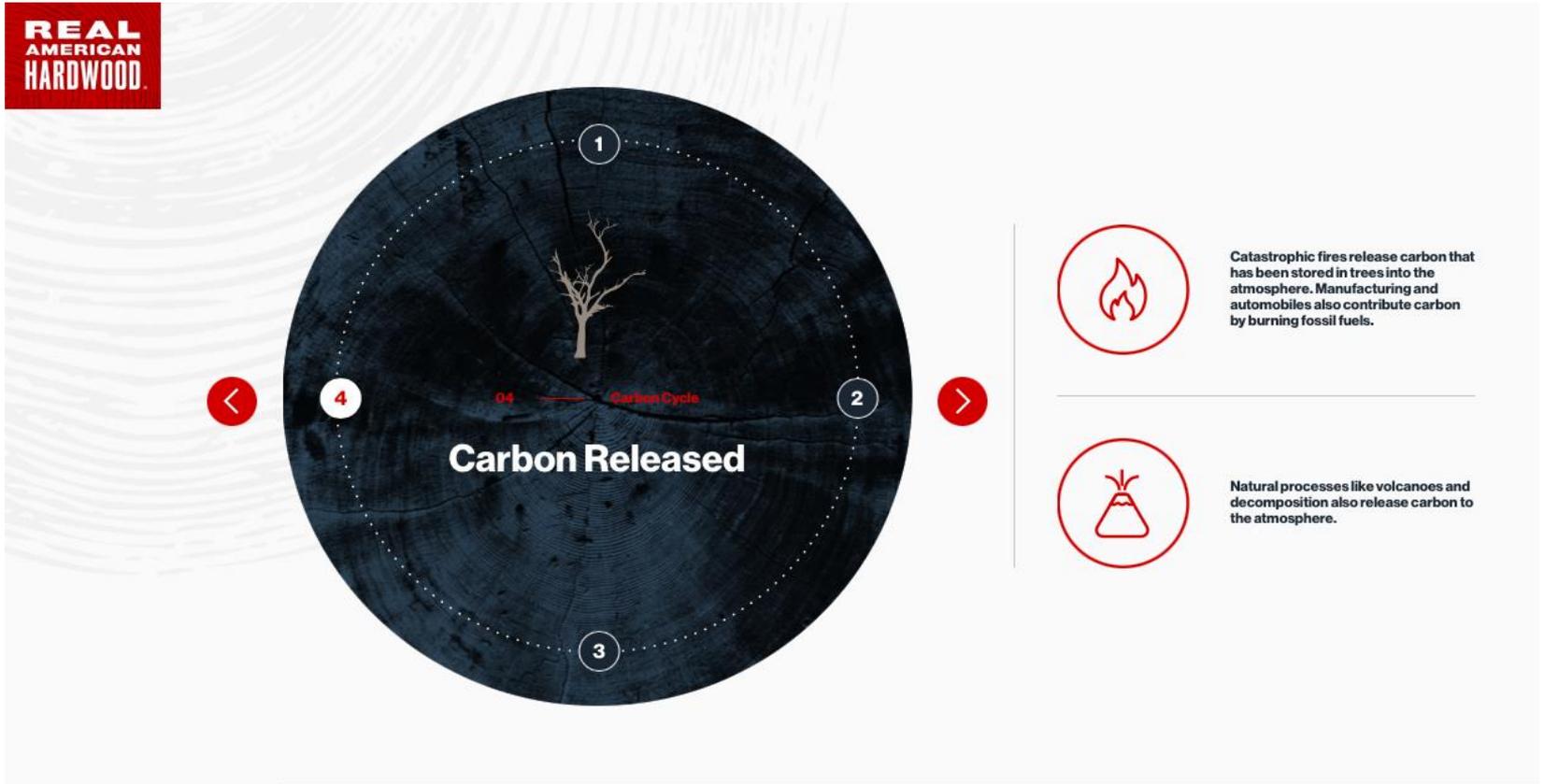
Sustainably managing forests is a way to reduce carbon and produce oxygen that we all need.

The infographic features a central circular cross-section of a tree trunk with a dark, textured appearance. A dotted white line forms a circle around the trunk, with four numbered white circles (1, 2, 3, 4) positioned at the top, right, bottom, and left respectively. In the center of the trunk, there is a silhouette of three trees. Below the trees, the text '02 Carbon Cycle' is written in red. The words 'Carbon Absorbed' are prominently displayed in white at the bottom center of the trunk. To the right of the trunk, there are two text boxes. The top box contains a red circular icon of a globe and the text 'Young, healthy forests absorb carbon more rapidly than older, dense forests.' The bottom box contains a red circular icon with the chemical formula 'O2' and the text 'Sustainably managing forests is a way to reduce carbon and produce oxygen that we all need.' Red arrows pointing left and right are located on the left and right sides of the trunk's dotted circle. The background of the infographic is light gray with faint, concentric white lines.

# Promoting Carbon Benefits of Forest Products



# Promoting Carbon Benefits of Forest Products



# Promoting Carbon Benefits of Forest Products



# Promoting Carbon Benefits of Forest Products

**What's in Wood?**

- 50% Carbon
- 42% Oxygen
- 6% Hydrogen
- 1% Nitrogen
- 1% Other Elements

✓ BIODEGRADABLE  
✓ RENEWABLE

**What's in LVT?**

- 0% Carbon
- 0% Oxygen
- 0% Hydrogen
- 0% Nitrogen
- 0% Other Elements
- 100% Plastic

✗ NON-BIODEGRADABLE  
✗ NON-RENEWABLE

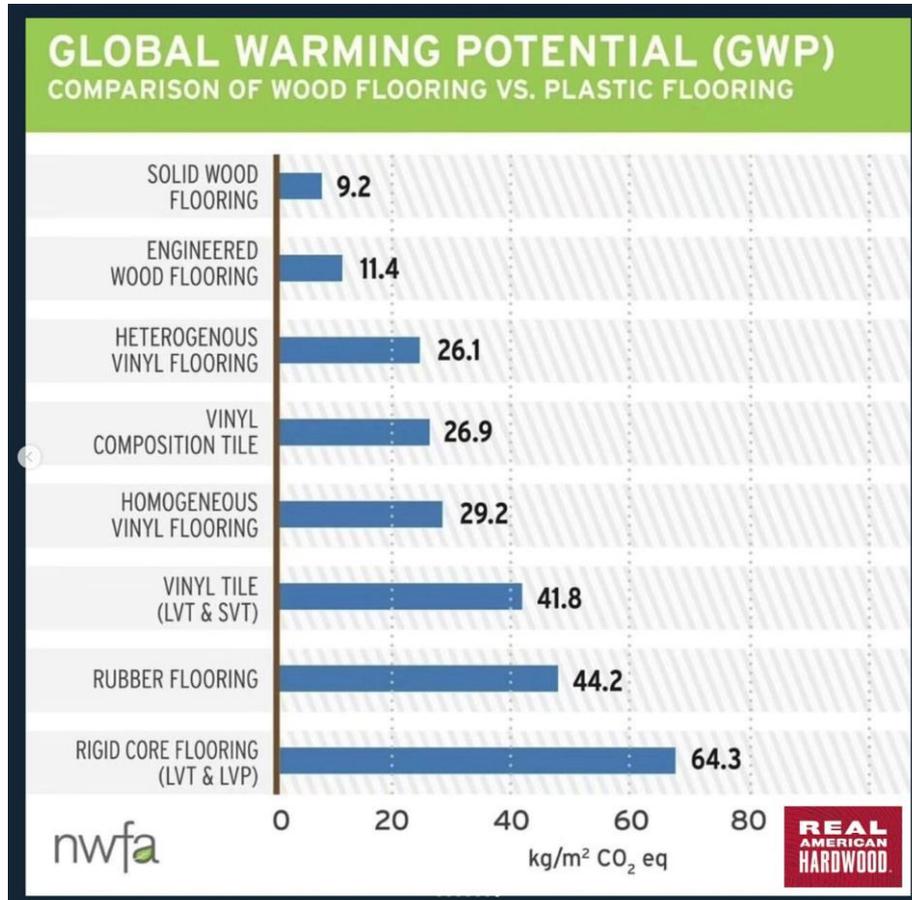
REAL AMERICAN HARDWOOD

.....

# Promoting Carbon Benefits of Forest Products



# Promoting Carbon Benefits of Forest Products



According to the USDA, “While trees grow in the forest, they store carbon dioxide from the atmosphere in their trunks, branches, stems, leaves, roots, and soil. So, when trees are sustainably harvested, wood continues to store carbon in the thousands of products we use every day, from paper products to lumber to energy generation. Trees then regrow, repeating the cycle.”

Wood flooring is a carbon-negative material. It stores carbon during its long service life, and beyond. This is because 92% of its biogenic carbon is stored permanently when it finds its final home in the landfill, as only 8% of the wood decomposes per the USEPA. Choosing flooring products that sequester and displace carbon is one of the most-efficient ways to mitigate climate change.

<https://nwfa.org/environmental-product-declarations/>

\*Kg of CO<sub>2</sub> equivalent per square meter of flooring

## Concerns / Considerations

- Pennsylvania's 2021 *Climate Action Plan* calls for Extended Rotations as a leading carbon mitigation strategy.
- Promotion of "Delayed Harvest" / Extended Rotations sends the wrong message about timber harvesting.
- National discussions about Old Growth also create confusion regarding benefits of active management.
- Pennsylvania's mature, even-aged forests require sustainable management, not delay.
- Incentivizing Pennsylvania forest landowners to further extend rotations will cause forests to emit carbon.
- Forests are unique in their ability to *sequester* carbon. Carbon can be *stored* in many places, notably as products in the built environment.

# Path Forward

We would like to see:

- Better quantification of carbon management strategies specific to Pennsylvania's forest type, age class and condition.
- A broad recognition of the role of the forest products supply chain in carbon mitigation.
- Greater use of low-grade material in energy applications, supporting sustainable forestry and offsetting energy sources that are not carbon neutral.

# Questions?



## Pennsylvania Forest Products Association

**Matt Gabler,  
Executive Director**

**717-901-0420 ext. 3**  
[matt@paforestproducts.org](mailto:matt@paforestproducts.org)  
[www.paforestproducts.org](http://www.paforestproducts.org)

**212 N. Third Street, Suite 203  
Harrisburg, PA 17101**