



# Fighting Climate Change With Forests And Wood

Sustainable forest management, combined with the use of wood products, is one of the best actions we can take to remove carbon from the atmosphere and to address climate change.

## The Carbon Challenge

In 2015, 195 countries around the world agreed to the goal of limiting the extent of global warming to less than 2°C by signing the Paris Climate Change Agreement. It is widely recognized that achieving this target will require more than just limiting greenhouse gas emissions. It will require an overall reduction in the amount of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases that are present in the atmosphere, as well as the means to store carbon sequestered from the atmosphere. Ontario's forests and wood products will play a key role in helping us meet this goal.



## Photosynthesis and Storing Carbon

Photosynthesis is the chemical process by which plants manufacture food in the form of sugars from CO<sub>2</sub>, water and sunlight. More simply put, as trees grow, they absorb CO<sub>2</sub>. Through photosynthesis, trees take CO<sub>2</sub> and convert it — expelling oxygen (O<sub>2</sub>) for us to breathe and keeping the carbon (CO<sub>2</sub>) for growth. More than 50 per cent of a tree is composed of carbon. Forests can absorb carbon, and they can also release carbon. When forests burn, or when trees die, they start to decay, and the carbon stored in their wood is returned into the atmosphere.

The rate at which trees absorb carbon changes as they get older. Younger and middle-aged forests that are growing continue to store more carbon. As forests get older their growth slows and they eventually reach a neutral state where the amount of carbon being absorbed slows down.



## Extending the Carbon Cycle

Think of the carbon that trees are absorbing as the building blocks. As the tree grows, it creates more building blocks. When trees are turned into wood products, they keep the carbon stored in these building blocks for an extended period of time. In many cases, these products can hold carbon for decades. Wood products have the additional benefit of being used as an alternate material to products made from concrete or steel which are resources that have a greater impact on CO<sub>2</sub> emissions than wood. These types of materials do not absorb and store CO<sub>2</sub> like forests do.



## Using Wood Products

Wood products like lumber, furniture, sports equipment and musical instruments store the carbon they absorbed while growing for an extended period of time. In many cases, these products can hold carbon for decades.

When we remove trees to create wood products, we have to ensure we do this in a sustainable way. Managing our forests to ensure they are healthy, support communities and provide us with the products we need, are all part of sustainable forest management. It also means restoring the forests to ensure that they will continue to provide these benefits. On provincially owned lands in Ontario, new trees are established by law through planting and other means. As these new trees take root, they grow and take additional carbon out of the atmosphere adding to the continuous cycle of carbon removal and storage. The net benefit is storing the carbon for a longer term beyond the life of a tree.

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