INDUSTRY IMPACTS ON US FORESTS

THE GREAT AMERICAN STAND SERIES

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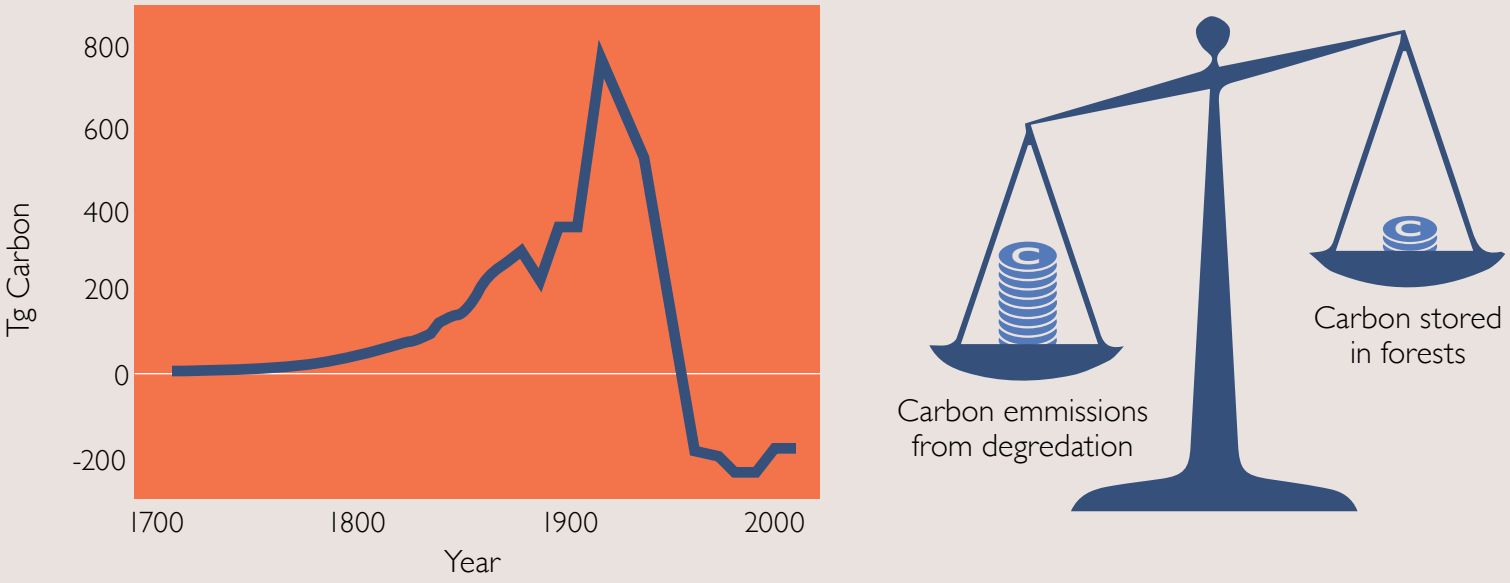
THE LASTING FOOTPRINT OF FOREST DESTRUCTION

Climate change is happening because we are releasing more and more greenhouse gases, like carbon dioxide, into the atmosphere each year. These emissions are well past a sustainable level that our atmosphere can handle. The carbon pollution comes from burning fossil fuels like oil and gas as well as deforestation and degradation. Every time a tree is chopped down, valuable carbon stocks are lost. We can think of forests, like oceans, as our carbon dioxide banks. When we cut down trees, it is like we are withdrawing from that carbon account. We've been overdrawing that account for quite a while.

FOREST CARBON BALANCE:

OUR FORESTS HAVE RELEASED MORE CARBON THAN THEY'VE STORED



From the 1700s to the mid 1900s, our forests were actually emitting carbon into the atmosphere (when the line is above zero), not storing it in our forests (when the line is below zero). This was a result of widespread industrial scale deforestation. Despite all of the progress we've made, we've got a long way to go to make up for all of those emissions.[1]

In the 1600s, there were over a billion acres of forest in the continental United States, with roughly a third of those acres in the US South. Colonization and settlement, followed by rapid extraction of natural resources, destroyed over a hundred million acres of forests in the US South in less than 100 years. In essence, we were overdrawing our carbon account and emitting carbon into the atmosphere instead of storing it in our forests.

Sometimes, reports and websites will claim that forests are "offsetting" fossil fuel emissions by absorbing carbon every year. Although they are, indeed, sequestering and storing carbon, our forests and our climate are hamstrung by pre-existing carbon debt from the 1700s into the 1900s. We just haven't made up for all of those emissions.

FOREST TURNOVER IN THE UNITED STATES

People don't plant pine to get healthy, mature forests. They plant pine because it grows quickly and can be harvested in just 20-30 years to make lumber, paper, wood pellets, or other forest products. **In the South, over half of our forests are less than 40 years old.** Our forests are harvested at a rate four times that of South American rainforests.

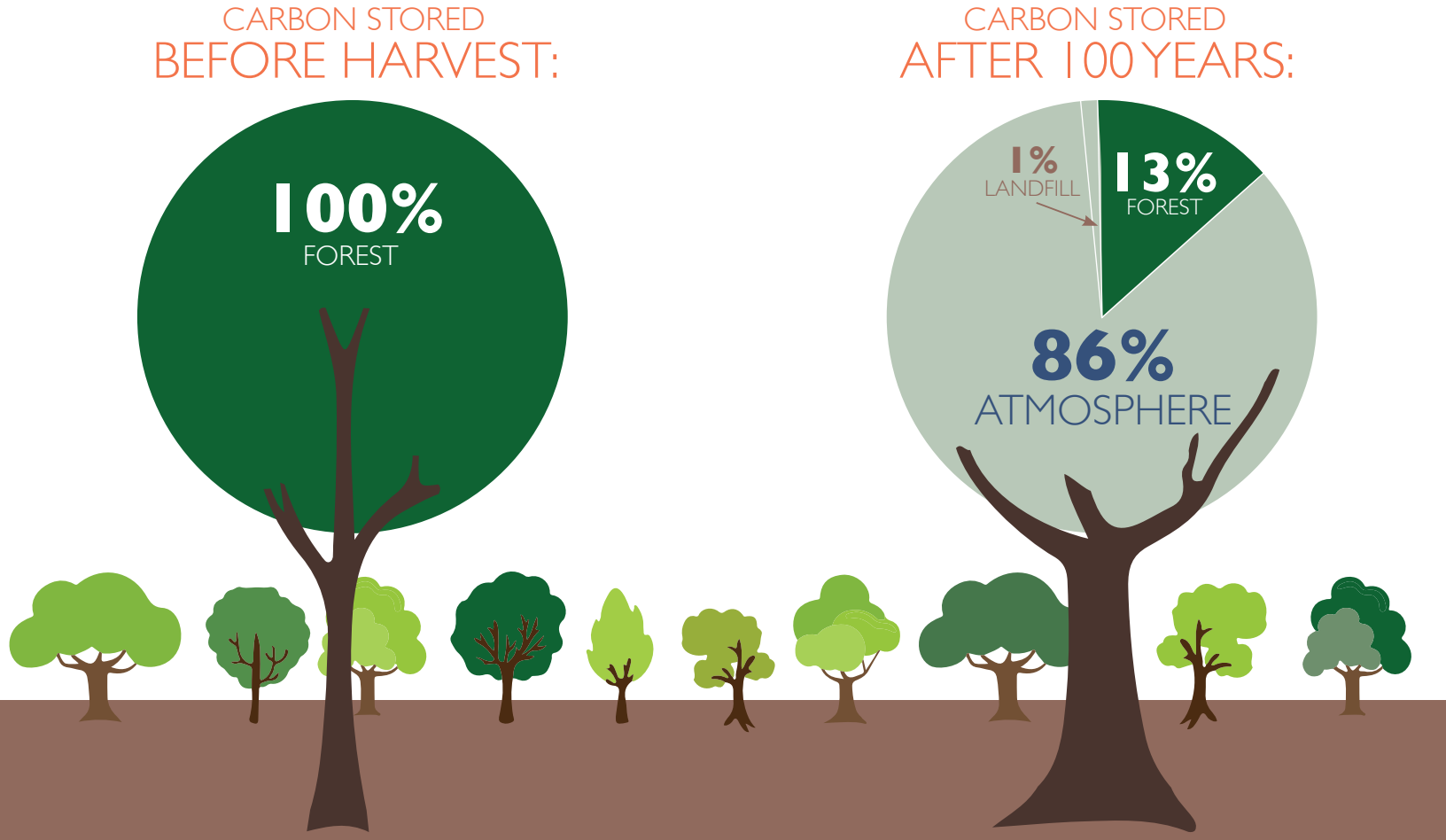
If our forests were left alone, they could continue to house our many native species of plants and animals, and they could provide recreation opportunities to children and adults alike. They could continue to store carbon, clean air, and provide fresh drinking water. Given the implications of climate change, we desperately need to leave our forests standing for carbon sequestration.

LONG- AND SHORT-TERM CARBON STOCKS

Forests store carbon by absorbing carbon dioxide from the atmosphere and using the carbon to build trunks, limbs, and roots. When forests are left standing, their "carbon stocks" can go undisturbed for generations, but when forests are cut to make products like lumber, paper, and pellets, they become a "carbon source" -- releasing carbon into the atmosphere.

Some reports say that carbon stocks are growing in the US. This is because reports like these rely on both long-term carbon stocks (standing forests) and short-term carbon stocks like wood products and tree plantations. The problem with combining short- and long-term carbon stocks is that short-term carbon stocks are released into the atmosphere within 100 years, which could accelerate climate change instead of reduce its impacts.

86% OF WOOD PRODUCT CARBON IS IN THE ATMOSPHERE IN 100 YEARS[3]

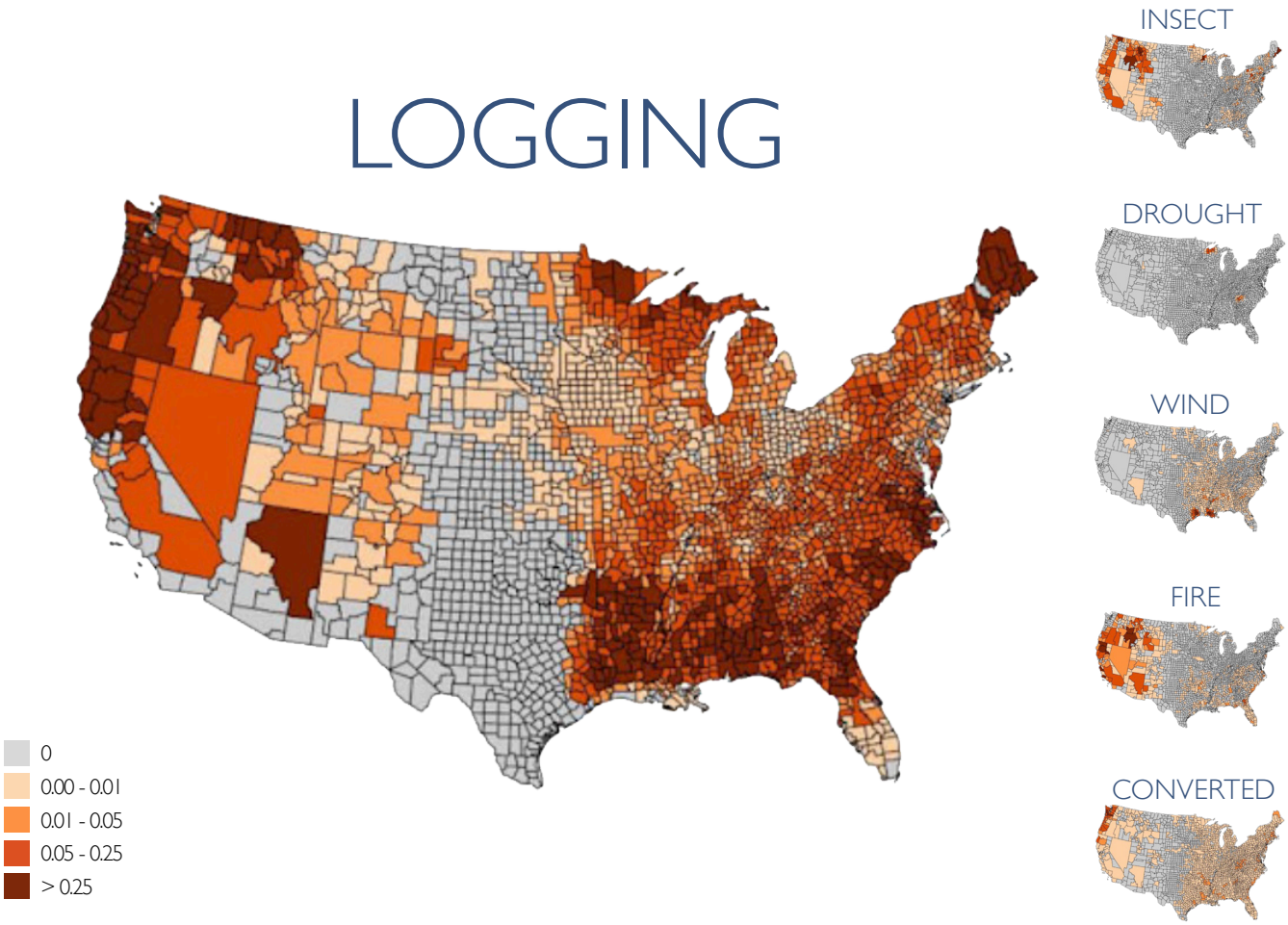


In the beginning, 100% of the forests' carbon is stored safely in trunks, limbs, leaves, and the soil. Carbon storage in forests helps prevent catastrophic climate change.

100 years after a clearcut, only 13% of the carbon is left in wood/paper products, and 1% is left in landfills. The remaining 86% of carbon previously stored in forest is now in the atmosphere.

EMISSIONS FROM US FORESTS

Carbon Loss (2006-2010) Tg C yr^{-1}



Countries report carbon dioxide stocks and emissions in several ways. In the US, carbon stocks and sources in forests are reported together (as a net calculation), while other sources of emissions are reported separately.

As a result, carbon dioxide emissions from logging are not measured or reported the same as other sources of emissions. Instead, all forest emissions are essentially reported as "offset" by annual forest growth, masking critical information necessary to inform climate policy.

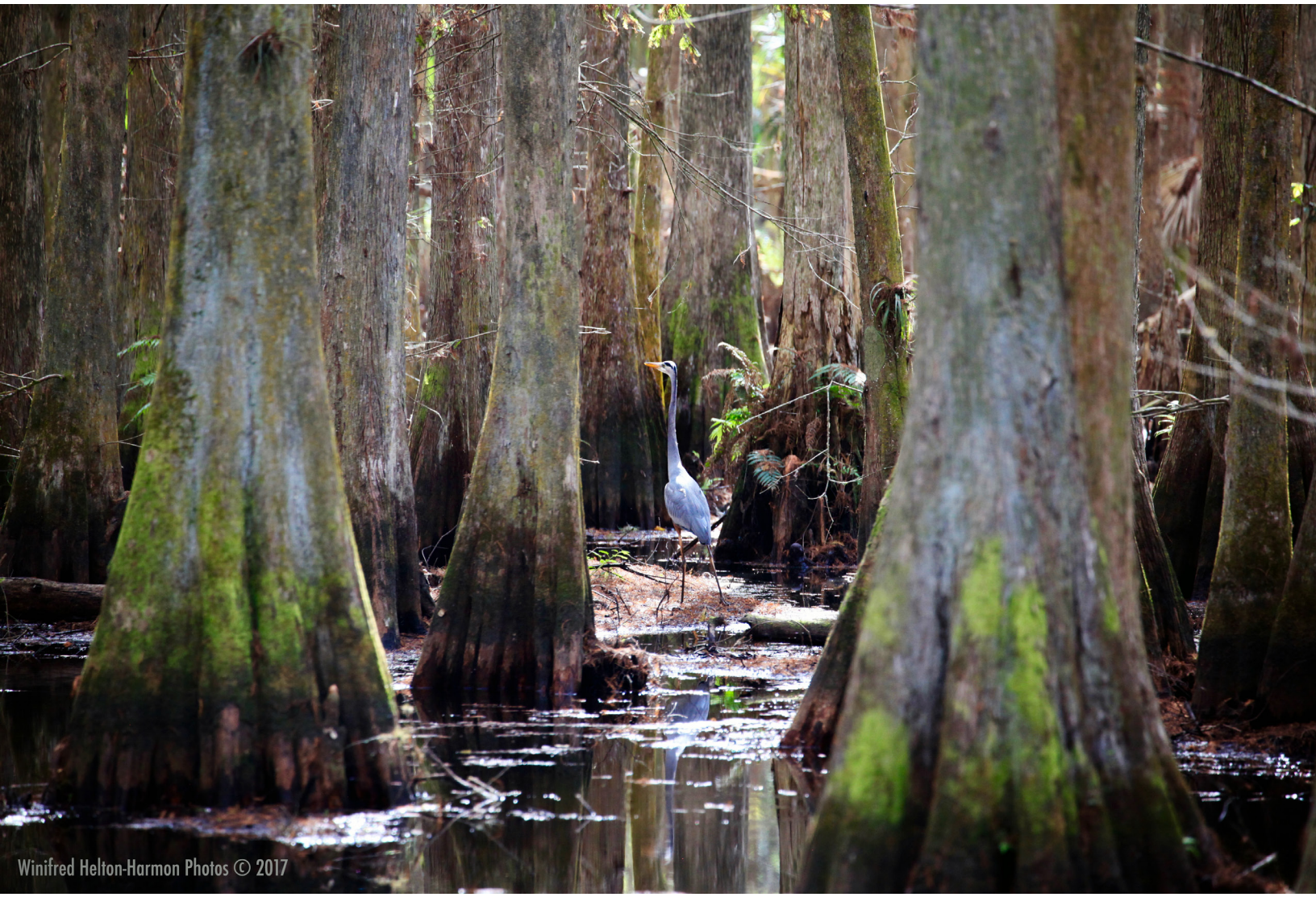
When we look closely at the data, **logging accounts for 85% of emissions from US forests, more than five times the emissions from conversion, fire, wind, insects, and tree mortality combined.**[4] Additionally, logging is diminishing the potential forest carbon sink by at least 35%.

OUR FORESTS ARE MORE THAN WOOD

The forest product industry would have you believe that forests are flourishing. They frequently mislead with graphs that do not show the loss of natural forest, the loss of old growth forest, or the loss of carbon resulting from conversion of natural forest to pine plantations.

If we continue to grow plantations instead of forests, we will lose out on a vast array of ecosystem services that forests provide, like fresh drinking water, clean air, regional climate control, and habitat for wildlife.

Standing forests are our best defense against climate change. Forests support our food system and protect our communities from natural disasters, like flooding and hurricanes. But currently our economic system favors forest destruction over forest protection. **Together, we can make a change.**



WHERE TO GO FROM HERE

Want to grow your knowledge of forests?

READ ONE OF OUR REPORTS:

- THE GREAT AMERICAN STAND: US FORESTS & THE CLIMATE EMERGENCY
- TREASURES OF THE SOUTH: THE TRUE VALUE OF WETLAND FORESTS
- A HISTORY OF FORESTS
- NATURE'S SOLUTION TO CLIMATE CHANGE

BE A LEADER FOR FOREST PROTECTION IN YOUR STATE.

SIGN THE PLEDGE

REFERENCES

1. Carbon Budget Balance Graphic (Page 2)

This graphic is reproduced from:

McKinley, D. C. et al. A synthesis of current knowledge on forests and carbon storage in the United States. Ecol. Appl. 21, 1902–1924 (2011). https://www.fs.fed.us/rm/pubs_other/rmrs_2011_mckinley_d001.pdf

2. Forest Age Graphic (Page 3)

This pie chart comes from tabulated data available in:

Oswalt, S. N. & Smith, W. B. U.S. Forest Resource Facts and Historical Trends - Metric. https://www.fia.fs.fed.us/library/brochures/docs/2012/ForestFacts_1952-2012_Metric.pdf

3. Long & Short Term Carbon Stocks (Page 4)

This graphic's data come from:

Halngerson, A. Carbon storage potential of harvested wood: summary and policy implications. Mitig Adapt Strateg Glob Change 16, 307–323 (2011). https://link.springer.com/article/10.1007%2Fs11027-010-9267-5 (paywall)

4. Carbon Loss From US Forests (Page 5)

This map is pulled directly from the following paper:

Harris, N. L. et al. Attribution of net carbon change by disturbance type across forest lands of the conterminous United States. Carbon Balance Manag. 11, 24 (2016). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5108824/