U.S. Forest and Wood Products Carbon Data
July 2021

Key Forest and Wood Products Carbon Messages

- Private working forests annually sequester more carbon than is emitted by passenger vehicles each year.
- Private working forests provide 90% of our forest products, while at the same time providing 72% of the gross annual forest sequestration by U.S. forests – our nation's largest carbon sink.
- Private working forests comprise 47% of all U.S. forests.
- Private working forests are the largest forest carbon storage pool, they account for 54% of the total forest carbon storage pool.
- The wood products storage pool stores more than double the carbon stored in all national parks.

Detailed Forest and Forest Carbon Datapoints

Sequestration

- Growing trees in U.S. forests sequester a massive amount of carbon each year. In total, they annually pull 1,581 MMT of CO_2e out of the atmosphere – almost as much as the annual U.S. emissions generated from burning fossil fuels for electricity.
    - *Gross annual forest sequestration is 1,581 MMT of CO2e and emissions from fossil fuel combustion for electric power production is 1,752.8 MMT of CO2e.*

- All forest types play a unique and essential role in actively sequestering carbon from the atmosphere. Private working forests are the largest forest carbon sink, accounting for 72% of the gross forest sequestration by U.S. forests.
    - *Gross annual forest sequestration is 1,581 MMT of CO_2e and private working forest account for 1,151 MMT of CO_2e of that total. 47% of total U.S. forest acres are private working forests.*

- Private working forests sequester more carbon than is emitted by passenger vehicles each year.
    - *1,151 MMT CO_2e sequestered by private working forests and 1,068 MMT CO_2e emitted by passenger vehicles.*

- Private working forests offset all the emissions from forest harvest operations and forest product manufacturing by sequestering sixteen times more CO_2e than is emitted each year.
    - *1,151 MMT CO_2e sequestered by private working forests and 68.8 MMT CO_2e emitted by forest harvest operations and forest product manufacturing)*

- On average, U.S. forests sequester more than 3,000 tons of CO_2e per minute. That is like capturing the emissions from burning 16.5 rail cars full of coal every minute.

Storage

- *Forests*
    - Forests are the optimal land use for maximizing carbon storage. The amount of carbon stored in U.S. forests is massive. In total, a full 82 years' worth of 2018 total transportation emissions are locked away in our forests.

        - *149,560 MMT of CO_2e stored in U.S. forests, 1,825.4 MMT of CO_2e emitted by transportation in 2018. NCASI Methodology.*
    - In total, a full 85 years' worth of 2018 total CO_2e emissions from U.S. electricity production from fossil fuels are locked away in our forests.
        - *149,560 MMT of CO_2e stored in U.S. forests, 1,752.8 MMT of CO_2e emitted by electricity production in 2018. NCASI Methodology.*
    - Private working forests are the largest forest carbon storage pool, they account for 54% of the total forest carbon storage pool.
        - *82,057 MMT CO_2e is stored in private working forests out of 149,560 MMT of CO_2e stored in U.S. forests. 47% of total U.S. forest acres are private working forests. NCASI Methodology.*

- *Wood Products*
    - When we cut a tree to produce lumber for a house or a building, half of that wood by weight is carbon.
    - Each year, new wood products add about 100 MMT CO_2e to the wood products storage pool. Which is more equivalent to taking 21.5 million cars off the road, which is about all the registered passenger vehicles in California and Florida.
        - *In 2018 98.8 MMT CO_2e were added to the wood products storage pool, 98.8 MMT CO_2e is equal to the GHG emissions from 21,487,015 passenger vehicles driven for one year. There are 14,860,967 passenger vehicles registered in California, and 7,778,49 passenger vehicles registered in Florida.*
    - Wood products store more than double the carbon stored in all national parks.
        - *3,465 MMT CO_2e stored in National Parks and 9,786 MMT CO_2e stored in wood products.*
    - There is not a choice between working forests and carbon benefits. 90 percent of annual U.S. harvest are on private working forests while they simultaneously provide 72% of annual forest carbon sequestration.
        - *Of total U.S. harvests on 7,878,000 acres, 698,000 were on public land and and,7,180,000 were on private land. Gross annual forest sequestration is 1,581 MMT of CO_2e and Private working forest gross annual sequestration is 1,151 MMT of CO_2e.*

Forest Trends

- Since the 1950's the total U.S. forest acreage has remained relatively constant, and the total volume of wood growing in our forests increased by nearly 60%. Most of that growth occurred in private working forests.
- Today we grow 43% more wood on private working forests than we harvest each year in spite of consistent high demand for wood.
    - Forest Inventory and Harvest Trends
- Since 1970, we now have 422 billion more cubic feet of timber on our landscape. For perspective, if that volume of wood was one 2x4, it would reach the moon and back more than 3,000 times. Most of that growth came from privately owned working forests.
    - *422 billion cubic feet = 5.64 trillion board feet, or 1.438 billion miles of 2x4's stacked end-to-end. Distance between Earth and its moon ~238,900 miles.*
- Wildfires
    - *Wildfire carbon emissions estimates are notoriously tricky to calculate and are based on complicated assumptions. The EPA estimates that 2017 and 2018 saw emissions of around 141.1 MMT of CO_2e in each year.*
    - *California emissions from 2018, the year of the infamous Camp Fire, released an estimate 45.5 MMT of CO2e according to the California Air Resources Board.*

Note: Forests in the United States have drastic differences based on species composition, region, location, ecosystem, management type, and climate. Comparing acres-to-acres from landscape-level data is not scientifically defensible and NAFO does not make such comparisons based on this national data.