Sustainable Forestry
Renewable Materials Storing Carbon

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President/CEO
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Global Forest Resources Assessment 2015

How are the world’s forests changing?

Forested areas have decreased but rate of net forest loss has been cut by 50%

- The biggest loss has been in the tropics, particularly in Africa and South America.
- Net forest area has increased in over 60 countries and territories, most of which are in the temperate and boreal zones.

Percentage of global land area

- 31.6% in 1990
- 30.6% in 2015

1990: 4,128 million ha
2015: 3,999 million ha
The use of a variety of forest products supports sustainable management of forest lands.
Trend in US forestland area, 1630 to present

Note: Data prior to 1950 are based on historical evidence, not field sampling. Source: USDA Forest Service, Forest Inventory Analysis Program. 2006.
Regional forest trends in the 48 States, 1760-2000

Original forests in what is now the U.S. totaled about 1.05 billion acres (including what is now the State of AK and HI). Clearing of forest land in the East between 1850 and 1900 averaged 13 square miles every day for 50 years; the most prolific period of forest clearing in U.S. history. This coincides with one of the most prolific periods of U.S. immigration. Currently, forests cover about 749 million acres of the U.S. or about 33 percent of all land.

Basis for chart data:

- 1940- pres.  FIA Field Inventory Reports
- 1900 – 1930  Forest Service report estimates prior to FIA field inventories.
- 1850 – 1890  Based on Bureau of the Census land clearing statistics.
- 1760 – 1840  Based on estimates of forest clearing proportional to population growth.

Source: National Report on Forest Resources and other historic data
<table>
<thead>
<tr>
<th>United States</th>
<th>Jobs</th>
<th>Annual Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood Products</td>
<td>434,900</td>
<td>$ 21 Billion</td>
</tr>
<tr>
<td>Forestry &amp; Logging</td>
<td>145,900</td>
<td>$ 3 Billion</td>
</tr>
<tr>
<td>Total Employment</td>
<td>580,800</td>
<td>$ 24 Billion</td>
</tr>
</tbody>
</table>

Source: [American Wood Council, Wood Products Industry at a Glance California 2018](#)
U.S. Forest Growth and All Forest Product Removals, 1920 - 2011
Billions of cubic feet/ year


(Net Growth = Total Growth - Mortality)
U.S. growing stock volume, billion cubic feet, and Timberland area, million acres 1953–2017

Forest Certification and Regulations

Forest Land Ownership

This map displays the basic vegetation (forest vs. non-forest) of the conterminous United States as well as ownership (private vs. public). The lands displayed as “public” include Federal and State lands but do not generally include lands owned by local governments and municipalities.

Data sources:
Forest: NLCD (1992)
Ownership: FAO (2001)
States: ESRI Data & Maps 2002
Urban areas: DCW (1998)

USDA Forest Service, State and Private Forestry, Cooperative Forestry Staff, Washington Office.
“...we identified the rise in timber net returns as the most important factor driving the increase in forest areas [in the United States] between 1982 and 1997.”

(Lubowski et al. 2008)
Carbon Benefits

Forests sequester carbon  
(climate change mitigation)  
Wood products sequester carbon  
(wood is 50% carbon by dry weight)
Forest Carbon flows on a stand-level

Source: Eliasson et al. 2011
Figure 1. Carbon storage over time under a no-harvest scenario compared to a sequence of 45-year rotation harvest, illustrating additional carbon storage from making and using wood products that substitute for concrete walls in residential housing construction. Diagram courtesy of Jay O’Laughlin, University of Idaho as part of the 2008 Policy Analysis Group on Carbon Sequestration Strategies in the Forest Sector.
Circularity
Renewable Resource | Carbon Sequestration

Sustainable Forestry supports ALL 17 UN SDG Goals

Source: Building with Wood – Proactive Climate Protection, Dovetail Partners, Inc.
ESG
UN Sustainable Development Goals

Sources:
Sustainable Wood for a Sustainable World global meeting (SW4SW) hosted by UN FAO
Forests and the Sustainable Development Goals, NYDF Global Platform
## ESG
### UN Sustainable Development Goals

<table>
<thead>
<tr>
<th>Goal</th>
<th>Image</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Reduced Inequalities</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>11. Sustainable Cities and Communities</td>
<td>![Image]</td>
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<tr>
<td>12. Responsible Consumption and Production</td>
<td>![Image]</td>
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<tr>
<td>13. Climate Action</td>
<td>![Image]</td>
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<tr>
<td>14. Life Below Water</td>
<td>![Image]</td>
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<tr>
<td>15. Life on Land</td>
<td>![Image]</td>
<td></td>
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<tr>
<td>16. Peace, Justice and Strong Institutions</td>
<td>![Image]</td>
<td></td>
</tr>
<tr>
<td>17. Partnerships for the Goals</td>
<td>![Image]</td>
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</tr>
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Sources: [Sustainable Wood for a Sustainable World global meeting (SW4SW) hosted by UN FAO]({#})

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# Long-Term Positive Effects

## Renewable Material | Carbon Storage

<table>
<thead>
<tr>
<th>Energy effect</th>
<th>Carbon effect</th>
<th>Value-added effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forest</strong></td>
<td>Stores solar energy</td>
<td>Removes C from Atmosphere</td>
</tr>
<tr>
<td><strong>Timber</strong></td>
<td>Often local, short transit</td>
<td>C in raw material</td>
</tr>
<tr>
<td><strong>Lumber</strong></td>
<td>Low embodied energy</td>
<td>Stores C; replaces materials w/ greater C impact</td>
</tr>
<tr>
<td><strong>Wood structure</strong></td>
<td>Low thermal conductivity &amp; bridging</td>
<td>Stores C; reduces insulation / GHG emissions</td>
</tr>
<tr>
<td><strong>Modernization, refurbishment, urban densification</strong></td>
<td>Lightweight &amp; easy to transport</td>
<td>More C storage</td>
</tr>
<tr>
<td><strong>Demo, recycling, energy recovery</strong></td>
<td>Low energy recycling or emissions neutral energy recovery</td>
<td>Extended C fixation due to recycling</td>
</tr>
</tbody>
</table>

Source: Building with Wood – Proactive Climate Protection, Dovetail Partners, Inc.¹
“In the long-term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber, or energy from the forest, will generate the largest sustained mitigation benefit.”

- International Panel on Climate Change (IPCC) Assessment Report
Conclusions

• North America has the ecology for growing trees, and forest area in the US has been stable for many generations.
• Forests and forest products provide natural climate solutions in the wood and in our built environment and they strengthen our rural economies.
• Strong markets for wood products provide incentives for landowners to keep lands forested.

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