

MY WORLD. MY STORY.

Sustainability: Seeing the Forest AND the Trees

June 2015

Sustainable sourcing is easier said than done. No one raw material is intrinsically more sustainable than another. What makes a source sustainable is the total social, environmental and economic impact of each step in its life cycle. Evaluating sourcing alternatives responsibly means balancing details and long-term implications. In the paper business, it means seeing the forest and the trees.

TRENDS

Private Ownership Advancing Sustainable Forest Management

The majority of fiber for papermaking in the US comes from sawmill waste, wood chips and pulpwood grown on privately-owned forestland in the southeast region of the country.¹ And, most of these owners are individuals, families and small businesses. Why does this matter? The economic impact of private family forests is significant, especially to local communities. These mostly small and medium sized tracts of forestland generate \$223 billion in annual revenues and 2.4 million jobs.² More importantly, research shows that private forest owners consider themselves stewards or caretakers of the land. As a result, they make decisions based on multiple land use objectives that include conservation, beauty and scenery, hunting and fishing, family heritage and legacy, as well as investment and income.³ Many have embraced sustainable forest management as a way to help maintain the value of the land as a forest and therefore resist development opportunities.

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\$223 Billion

Annual Revenues

**2.4 Million**

Jobs



Rising Collection and Reuse of Recovered Paper

The use of recovered paper has been increasing since 1990. In the past 25 years, the recovery rate has nearly doubled to just over 65%.⁴ Recovered paper is now a key fiber source for the US paper industry. In 2013 for example, the 50 million tons of paper recovered in the US accounted for 37% of the fiber used in papermaking.⁵ Impressive as the US 65% recovery rate is, there may be room for improvement since US paper recovery and recycling rates have historically lagged recovery rates in Europe and Japan.⁶ What's more, total US paper production is expected to grow slowly but steadily through 2050, ensuring a growing supply of recovered paper.⁷



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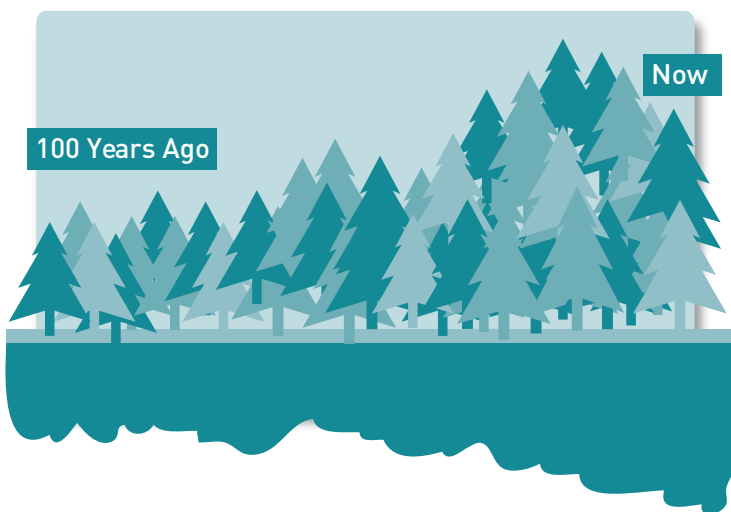
Continued Experimentation with Alternative Fibers

Experimentation with alternative fibers in paper-making is a centuries-old trend.⁸ As long as paper has been made, producers have been experimenting with different materials seeking a cost or performance advantage. Alternative fibers have included everything from papyrus and animal skins to rags, grasses and other plants. Alternative fibers and agricultural byproducts of interest in the US today include bamboo, kenaf, hemp, flax and wheat straw.⁹ Research has determined that these fibers offer the benefits of being fast-growing and easy to process. On the flip side, use of alternative fibers may detract from finished paper's whiteness, softness and absorbency.¹⁰ Currently, use of such fibers represents <5% of global US paper and packaging production.¹¹



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INSIGHTS



US Forests are Thriving

This fact surprises many readers, but it is true. According to the US Forest Service, there is more forestland in the US today than there was in 1920.¹² Net growth has exceeded net removal every year for at least six decades. Today, the annual tree harvest amounts to just 1.3% of the growing stock.¹³ Thank the sustainable forest management efforts of private forest landowners for this environmental success story. By being open to modern forest stewardship practices, private landowners have preserved forest acreage, increased yield and demonstrated that forest and trees are valuable, renewable resources. However, there are threats to forests. Some are natural, such as fire, disease or non-native invasive species. Others are land use changes driven by changing demand for urban/suburban development, expanding agriculture, or grassland (pasture and range).

Generating a steady supply of alternative fibers or agricultural byproducts to make paper will require significant acreage be dedicated to its cultivation.

Expanded cultivation of alternative plant fibers presents environmental risks

One of the key risks is deforestation as forests are cleared for agriculture. Generating a steady supply of alternative fibers or agricultural byproducts to make paper will require significant acreage be dedicated to its cultivation. Many of those new fields will stand in what is now forestland. Compared to forests, cultivated crops generally require high intensity management in the form of increased water use, frequent fertilizer, pesticide and herbicide applications and an annual harvesting cycle – all of which have an environmental impact and potentially unintended consequences on the local economy, wildlife habitat and native plants.¹⁴



Recovered paper's most significant environmental impact is waste reduction

Every ton of recovered paper that goes back to the pulper saves 3.3 cubic yards of landfill space. In 2014, that totaled 16.5 million cubic yards.¹⁵ That's enough recovered paper to fill 91,000 garbage trucks that form a line from NYC to Cincinnati. Rising financial and environmental costs of landfills are creating incentives to increase recovery rates through new access to curbside recycling and promoting consumer recycling. Paper makers are investing in technology that will enable them to harvest more fiber from the recovered paper waste stream including foodservice disposables which up to now, have been thought to be "too dirty" for recycling.

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Healthy Forests and Renewable Energy

Sustainable forest management also has an important role in expanding the supply of renewable biomass energy. Enhancing the health of forests often requires the removal of forest residue, such as dead or small woody plants, branches, needles and leaves, that can put a forest at greater risk of fire, epidemic disease or insect infestation. This forest residue material, or woody biomass, can be converted into energy that is both renewable and carbon neutral.

Georgia-Pacific has a long history of using biomass, bark, wood residues and by-products from operations to produce renewable energy. In fact, GP generates approximately 12% of the total electricity generated from renewable woody biomass in the United States. Our pulp and paper mills generate almost 60% of their electricity from renewable, carbon neutral biomass. Nothing goes to waste. Any excess power generated is sold in the form of renewable energy certificates to help other businesses meet their renewable energy goals.¹⁶



IMPLICATIONS

Georgia-Pacific's commitment to sustainable fiber sourcing demands a profound understanding of the social, economic and environmental implications of each of our decisions in both the short term and the long run. We've accepted that challenge and are confident we've struck the right balance between the forest and the trees.

Wood fiber will remain the best raw material for Georgia-Pacific papermaking for the foreseeable future. Why? It provides superior product performance, helping to make paper that is soft, absorbent and white. Wood fiber is competitively priced by market conditions. Wood fiber is plant-based, recyclable, renewable and compostable. As they grow, trees have little need for fertilizers, pesticides or herbicides yet clean the air and water and support wildlife. What's more, purchasing wood fiber helps support family businesses and promote healthy forests.¹⁷

Paper recovery rates will continue to rise and new technology will make new sources of fiber available for recycling. Georgia-Pacific sees recovered paper as a sustainable choice worthy of significant investment. That's why we're also investing in GP Harmon. Founded in 1970, Harmon Recycling became part of Georgia-Pacific in 2000. The company is now one of the largest recycled fiber traders in the \$8.5 billion recovered paper industry. Last year, Harmon traded more than 7 million tons of recycled fiber and secured over 2 million tons of recycled fiber for Georgia-Pacific Consumer Products.

Innovative companies like Georgia-Pacific will continue experimenting with new wood sources, recovered paper categories and alternative fibers that may improve the cost, performance or environmental impact of our products. Our thorough evaluation process includes assessing the full environmental impact of choosing an alternative fiber, including its potential impact on the existing sources. We look for sustainable certifications, procurement standards and a recovery/reuse infrastructure to evaluate these alternatives.

How can you ensure your vendors are practicing sustainable sourcing? Verify that your suppliers use wood fiber from certified and sustainably managed forests. Ask how materials are transported and what programs are in place to conserve fiber, energy and water. Work with suppliers that are actively involved in source reduction and waste reduction initiatives. Rely on independent third party organizations to learn more about sustainable sourcing, processing, packaging, and recovery – and see which suppliers have earned key certifications.

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7 Million
Tons

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57%

of US forestlands are privately owned. These lands provide 89% of timber harvest.

Source: Dovetail Report

Georgia-Pacific Professional's EcoSmart™ platform is designed to help meet our customers' needs by addressing the social, economic & environmental dimensions of sustainability.

We help customers achieve their sustainability goals through our efficient responsible use of resources and ongoing innovations that increase the sustainability of our products. Learn more about our EcoSmart™ programs and initiatives at gppro.com/sustainability. ■

Footnotes:

1. Dovetail Partners. Tree-Free Paper: A Path To Saving Trees and Forests, 2014
2. National Association of Forest Owners (NAFO). The Economic Impact of Privately Owned Forests in the United States, June 27 2013
3. Forestry Land Use Issues, accessed May 2015. South Carolina Department of Natural Resources and National Oceanic and Atmospheric Administration, Coastal Services Center, 2001. Characterization of the Ashepoo-Combahee-Edisto (ACE) Basin, South Carolina. [CD-ROM]. Charleston SC: NOAA, Coastal Services Center. SC Marine Resources Center Special Scientific Report Number 17, NOAA/CSC/20010-CD. Available from: NOAA Coastal Services Center, 2234 South Hobson Avenue, Charleston, SC 29402-2413 or Elizabeth L Wenner, SCDNR Marine Resources Division. Po Box 12559, Charleston SC 29422-2599 or www.csc.noaa.gov/clearinghouse
4. AF&PA. Paper Recycles. Accessed May, 2015 <http://www.paperrecycles.org/statistics>
5. Dovetail Partners. Tree-Free Paper: A Path To Saving Trees and Forests, 2014
6. Dovetail Partners. Paper Recycling in the United States and Beyond: An Update, 2008.
7. Forisk Consulting. Forisk Forecast: Projecting Paper and Paperboard Production in the US, Blogpost, September 14, 2014
8. Dovetail Partners. Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
9. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
10. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
11. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
12. USDA and US Forest Service. National Report on Sustainable Forests, 2010.
13. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
14. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.
15. AF&PA Paper Recycles Accessed May, 2015. <http://www.paperrecycles.org/about/fun-facts>
16. Georgia-Pacific. <http://www.gp.com/~media/Corporate/GPCOM/Files/Sustainability/Sustainability-Documents/TreeFreeBrochure.aspx?force=1>
17. Dovetail Partners, Tree-Free Paper: A Path to Saving Trees and Forests, 2014.