Print & Paper

Myths & Facts

HOT

Print and Paper have a great environmental story to tell

www.twosidesna.org

When it comes to the sustainability of print, paper and paper-based packaging, it's important to separate verifiable facts from opinion and misinformation. This booklet provides relevant and balanced information to help you make informed choices.

Two Sides is committed to promoting the sustainability of print and paper products and to dispelling common environmental misconceptions by providing factual information from trustworthy third-party sources. Read on to learn more about the uniquely sustainable qualities that make print and paper products an attractive, practical and enduring part of our everyday lives.

"Paper has been an integral part of our cultural development and is essential for modern life. Paper helps to increase levels of literacy and democracy worldwide and plays an important role in protecting goods and foodstuffs during transit. Paper is made from renewable resources, and responsibly produced and used paper has many advantages over other, nonrenewable alternative materials."

World Wildlife Fund, Guide to Buying Paper

What a great, sustainable idea

For sheer flexibility, style and effectiveness, print and paper are a natural choice for sustainable and powerful communications, marketing and product packaging.

Two Sides North America is an independent, non-profit organization, and is part of the Two Sides global network which includes more than 600 member companies across North America, South America, Europe, Australia and South Africa. Our member companies span the Graphic Communications and Paper-based Packaging industry, including forestry, pulp, paper, paper-based packaging, chemicals and inks, pre-press, press, finishing, printing, publishing, envelopes and postal operations.

The business community is increasingly aware of its responsibility and accountability for maintaining standards of ethical, social and environmental performance.

Two Sides recognizes that the print, paper and paper-based packaging industry has a responsibility to continually improve its environmental credentials and address customer concerns, which are sometimes the result of misleading or inaccurate information.

Two Sides sets out the facts in a clear and straightforward manner, addressing some of the inaccuracies and issues that surround the industry.

Print and paper products have been around for more than 2,000 years and have stood the test of time. In today's multimedia world of global commerce, print, paper and paper-based packaging continue to be a vital and sustainable means of communication, marketing, knowledge sharing, information security, and product safety and transport.

By fostering a better understanding of our industry's environmental credentials, Two Sides seeks to ensure that print and paper products through their myriad uses – from commercial applications to the basis of learning and creativity – remain an essential medium of choice.

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Membership

Membership in Two Sides shows that your organization regards environmental responsibility as an essential part of its business strategy. Benefits of membership include access to materials and information, the opportunity to interact with our member network and industry experts, and the ability to augment your organization's own sustainability messaging and environmental credibility with customers, employees and other stakeholders.

Membership is open to any commercial enterprise in the Graphic Communications and Paper-based Packaging industry, as well as to industry trade groups, non-governmental and other organizations. Two Sides also welcomes partners with specific skills and expertise that support our aims and objectives.

Visit **www.twosidesna.org** to find out how to join.

This booklet includes the most recent information, statistics and data available at the time of printing (July 2020). Two Sides North America updates its Myths and Facts booklet every two years.

The Myth

Going paperless saves forests

The Fact

In North America, we grow many more trees than we harvest

NORTH AMERICAN FORESTS ARE A RENEWABLE RESOURCE THAT IS CONTINUOUSLY REPLENISHED USING SUSTAINABLE FOREST MANAGEMENT.

Paper manufacturers encourage forest sustainability through their purchase and use of certified wood fiber and by promoting sustainable forest management policies and practices at home and around the globe. By providing a dependable market for responsibly grown fiber, the paper industry encourages landowners to manage their forestland instead of selling it for development or other non-forest uses.[1]

"The greatest incentive for continued investment and retention of our nation's forests is a stable market for paper and other wood products."

Dovetail Partners, 2016

Net forest area in the U.S. has been stable since the early 1900s and increased by about 2% from 752 million to 765 million acres between 2007 and 2017.[2] Net volume of growing stock increased by more than 5% over the same period.[2] Canada's forest area of 857 million acres has been quite stable over the past 25 years.[3]

Each year, forests in North America grow significantly more wood than is harvested. In the U.S., average net annual increase in growing-stock trees on timberland is about 25 billion cubic feet.[2] In 2017, Canada harvested just over 5.5 billion ft^3 of timber, well below the estimated sustainable wood supply level of 7.8 billion ft^3.[3]

Tree cutting and removal in the U.S. occurs on less than 2% of forest land per year in contrast to the nearly 3% disturbed annually by natural events like insects, disease, and fire.[2] Harvesting occurs on 0.2% of Canada's forest lands each year while 4.5% is disturbed by insects and 0.7% by fire.[3]

Sustainable forest practices, forest certification and government regulations require mandatory regeneration so that harvested areas continue to produce forests for the long term.[3]

More than half the forest land in the U.S. is owned and managed by about 11 million private forest owners. Private forest lands provided 89% of the domestically produced wood and paper products in 2017.[2] The income landowners receive for trees grown on their land encourages them to maintain, sustainably manage and renew this valuable resource.

The Myth

Paper is bad for the environment

The Fact

Paper is one of the few truly sustainable products

PAPER IS MADE FROM WOOD, A NATURAL RESOURCE THAT IS RENEWABLE, RECYCLABLE AND CAN BE MANAGED SUSTAINABLY.

The paper industry adheres to respected third-party certification standards to ensure the paper you buy comes from a sustainable forest source. These include the Forest Stewardship Council® (FSC®), Sustainable Forestry Initiative® (SFI®), American Tree Farm System (ATFS) and Program for the Endorsement of Forest Certification™ (PEFC™) standards.[4]

The U.S. Lacey Act prohibits the import or trade of illegal timber and requires companies to assess and manage the risk of introducing illegal wood products into their supply chains.

World Resources Institute, 2018

Credible certification contributes to a more sustainable timber products industry by helping create market conditions that support forest conservation. Such conditions also provide economic and social benefits for local communities, workers and the environment.[5]

Globally, about 11% of the world's forests are certified – the majority of which are in North America.[6]

Nearly half of Canada's forests are certified to an independent sustainable forest management standard, In fact, 37% of all certified forests worldwide are in Canada, the largest area of any country.[7]

In North America, paper is recycled more than any other commodity and the benefits include: reducing greenhouse gas emissions of methane released when paper decomposes in landfills [methane has a global warming potential 25 times higher than carbon dioxide], extending the supply of wood fiber, reducing the amount of energy needed to produce some paper products and saving considerable landfill space.[8] These features, combined with the North American paper industry's advocacy of responsible forestry practices, certification, the use of renewable biomass energy and advances in efficient papermaking technology make paper one of the most sustainable products we use.

About 40% of the fiber used in papermaking in the U. S. is obtained through recycling.[9] The rest comes from wood that is typically obtained through thinning of forest stands being grown to larger diameters to provide raw material for lumber and plywood, patch clearcutting of smaller diameter trees managed for pulp production, and collection of chips and sawdust produced as by-products in the production of lumber.[1]

The Myth

Paper is a
wasteful product

The Fact

Paper is one of the most
recycled products in the world

NORTH AMERICA IS A LEADING PAPER RECYCLER AND, AS LOCAL COLLECTION SYSTEMS IMPROVE, RECYCLING RATES WILL INCREASE EVEN FURTHER.

In 2020, the U.S. paper recovery rate for recycling was 66%.[10] Corrugated boxes had a recovery rate of 89%.[11] In contrast, recycling rates for plastics, glass and metals were 9%, 25% and 34%, respectively.[12]

In Canada, 70% of paper and cardboard is recycled, making Canada among the top paper recycling countries in the world.[13] The national recovery rate for old corrugated boxes in Canada is estimated at 85%.[14]

"The forest products industry has unique aspects that are consistent with principles of the Circular Economy. The industry is based on renewable resources and its products are recyclable."

National Council for Air and Stream Improvement, 2018

Overall paper recycling numbers are approaching the practical theoretical maximum recycling rate of 78%.[15] Some paper products cannot be recovered for recycling because they are kept for long periods of time (books) or archived (records); others are destroyed or contaminated when used (e.g. tissue and hygienic paper). The continuation of the paper production cycle therefore requires constant replenishment with new fiber from sustainably managed forests.

In a circular economy scheme, the product's end of life is reconnected with its production by reusing the already extracted resources, which are contained in used products. This circular economy scheme is particularly suitable for the pulp and paper sector, thanks to the possibility of producing paper and packaging from used paper products.[16]

The paper and wood products industry's efforts to promote sustainable forest management, to do more with less in the manufacturing process and to recover products for recycling form the foundation of our contributions to the circular economy.[17]

The Myth

Only recycled paper should be used to make new paper

The Fact

Wood fiber from sustainably managed forests is essential to the paper cycle

EVERY TIME PAPER IS RECYCLED, THE FIBERS GET WEAKER AND SHORTER. AFTER BEING RECYCLED 5 TO 7 TIMES, THE FIBERS BECOME TO SHORT TO BOND INTO NEW PAPER.

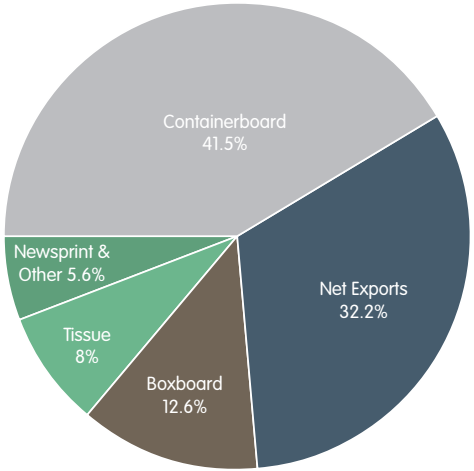
Using the right fiber for an application is important because fresh and recycled fibers have different characteristics. As fiber quality deteriorates in the recycling process, fresh fibers are always needed in the recycling loop. Because of fast cycles, fiber would run out in about six months if fresh fiber were not constantly added to the life cycle. The addition of fresh fiber starts either with the production of products that need specific fiber properties or with the combination with recycled fibers.[16]

Overall, a technical maximum of 67% to 73% of fibrous inputs used to make paper products can be supplied by wastepaper; the rest needs to be virgin fibers.

Van Ewijk et al. 2017

In 2019, recovered paper accounted for 40% of total U.S. fiber consumption to make new paper products.[9] Approximately 80% of all U.S. paper mills use some recovered fiber to make everything from paper-based packaging to tissue products to office paper and newspaper.[18]

In 2020, 41.5% of the paper collected for recycling in the United States was used to produce containerboard (i.e. corrugated boxes), 12.6% to produce boxboard (folding boxes like cereal or medicine boxes, and gypsum wallboard, i.e. drywall/facings.), 8% for tissue and 5.6% for newsprint. Exports accounted for 32.2%, down from 35.7% in 2019.[19]



Source: American Forest & Paper Association and U.S. Census Bureau

The Myth

Paper production is a major cause of global greenhouse gas emissions

The Fact

Most of the energy used in paper production is renewable and carbon intensity is surprisingly low

66.6% OF THE ENERGY DEMAND AT U.S. PULP AND PAPER MILLS IS MET WITH RENEWABLE BIOMASS ENERGY.

A look across the entire life cycle shows that paper's carbon footprint can be divided into three basic elements: greenhouse gas (GHG) emissions, carbon sequestration and avoided emissions. Each of these elements is influenced by important characteristics that make paper's carbon footprint smaller than might be expected: it is made from a renewable resource that stores carbon, is recyclable and is manufactured using mostly renewable energy including biomass, biogas and hydroelectricity.

With 0.8% of the world's total greenhouse gas emissions in 2017, the paper, pulp and printing sector is one of the lowest industrial emitters.

Navigent, 2019

Trees use the energy of sunlight, and through the process of photosynthesis take carbon dioxide (CO_2) from the air and water from the ground. In the process, oxygen is released into the air. In addition to the CO_2 that trees capture, they also help soil capture significant amounts of carbon.[20]

In 2018, U.S. forests and wood products captured and stored roughly 12% of all carbon dioxide equivalents (CO_2e) emitted by the U.S.[21]

In Canada in 2018, forest land captured and stored 19% of all CO_2e emitted in Canada.[22]

GHG emissions (CO_2e) from the U.S. pulp and paper industry dropped from 44.2 million metric tons to 35.7 million metric tons (15%) between 2011 and 2018 due in part to improved energy efficiency and increased use of less carbon-intensive fossil fuels and carbon-neutral biomass-based energy sources.[23]

Pulp and paper facilities self-generate more than half of their electricity needs, more than 90% of this through the efficient use of combined heat and power (CHP). CHP makes the most of energy resources by generating electricity and utilizing the heat that would otherwise be wasted to provide useful thermal energy for manufacturing operations.[24]

In both the U.S. (2018) and Canada (2017), the pulp and paper industry was responsible for about 0.5% of the total industrial CO_2e emissions.[25,26]

In Canada, bioenergy continues to increase its share of the energy mix, accounting for 62% of forest industry energy use in 2018, up from 49% in 2000 and 43% in 1990.[27] Between 2005 and 2015, the Canadian forest industry reduced its energy use by 31% and GHG emissions by 49%.[28]

The Myth

Electronic communication is more environmentally friendly than paper-based communication

The Fact

Electronic communication has environmental impacts

E-WASTE CAN BE TOXIC, IS NOT BIODEGRADABLE, AND ACCUMULATES IN SOIL, AIR, WATER AND LIVING THINGS.

It is estimated that there are 3.5 billion smartphones, 1 billion computers, 5 billion to 7 billion other connected devices and 45 billion servers worldwide. The manufacture of a computer requires 240 kg of fossil fuels, 22 kg of chemicals, 1.5 t of water and numerous precious (gold and platinum) or rare earth minerals (tantalum, lanthanum, neodymium, yttrium) as well as those which are dangerous for the environment (lead, bromine, arsenic, chlorine, mercury and cadmium).[29,30]

In 2018, an estimated 50 million metric tons of e-waste were generated globally. The U.S. collects approximately 22% of its e-waste.

World Economic Forum, 2019
International Telecommunication Union, 2017

Globally, the average number of devices and connections per capita will grow from 2.4 in 2017 to 3.6 by 2023. The average per capita numbers for the U.S. and Canada are 13.6 and 11, respectively.[31]

The contribution of Information and Communication Technology (ICT) to greenhouse gas (GHG) emissions could grow from roughly 1.6% in 2007 to over 14% of the 2016-level worldwide GHG emissions by 2040.[32] In comparison, the combined pulp, paper and print sector is one of the lowest industrial emitters at 0.8% of the world's GHG emissions.[33]

Worldwide in 2019, the number of emails sent and received per day totaled over 293 billion.[34] With each email estimated to release .000001 metric tons of CO_2, total CO_2 generated by emails globally is about 107 million metric tons of CO_2 per year[35] or the amount of CO_2 produced annually by 23 million cars.[36]

In 2018, data centers in the U.S. consumed almost 2% of total U.S. electricity consumption. Large amounts of water are also required to operate data centers for space cooling and indirectly to produce electricity since most forms of electricity production use significant amounts of water.[37]

A study by Two Sides found that half the leading Fortune 500 telecommunications companies, banks and utilities were making unsubstantiated claims about the environmental benefits of electronic billing. In response, Two Sides initiated a campaign to educate senior executives on the sustainability of print and paper and to encourage them to abandon misleading environmental claims. As of July 2020, 129 North American companies and over 500 globally have removed or changed inaccurate anti-paper claims.[38]

The Myth

Paper production consumes an excessive amount of water

The Fact

Paper production is dependent on water, yet relatively little is consumed

WATER USE BY PULP AND PAPER MILLS DOES NOT EQUAL WATER CONSUMPTION. MOST WATER DRAWN FROM THE ENVIRONMENT IS RECYCLED MULTIPLE TIMES, CLEANED AND RETURNED TO THE SOURCE.

While pulp and paper manufacturing requires a lot of water, 90% of it is returned to the environment in a manner that conforms with water quality criteria in North America. Water is used efficiently within mills with each gallon of water being used more than 10 times before being returned to the receiving environment.[24]

U.S. pulp and paper mills have reduced water use by 6.6% since 2005.[4]

Between 1959 and 2017, there was an 81% reduction in the average treated effluent flow volume at pulp and paper mills within the United States. Similar progress was made by the Canadian pulp and paper industry.

National Council for Air and Stream Improvement, 2020

In Canada there have been significant improvements in pulp and paper mill environmental performance over the last 20 years through reduced mill effluents, air emissions and water use. Thanks to investments in water-efficient technologies, water-use intensity at Canada's pulp and paper mills dropped nearly 20% between 1999 and 2010 and a further 3% between 2010 and 2015.[39,40]

Well-managed forests can lessen many negative impacts on people and the environment. As water passes through a forest ecosystem, it gets cleaner because the soil filters out substances such as mercury, pesticides and other pollutants. Forest cover can slow down or even prevent soil erosion, which can happen during heavy rains and cause sedimentation of streams, rivers and lakes. Forest systems retain moisture in their soils, delay the release of water into streams and help to stabilize the quality and quantity of surface and groundwater in the area.[41]

It is estimated that 50% to 75% of the U.S. population relies on forest lands to produce adequate supplies of good quality water.[42]

The Myth

Digital is always the preferred means of communication

The Fact

Many consumers value paper-based communication

SWITCHING TO DIGITAL IS NOT ALWAYS WELCOMED BY CONSUMERS AND MANY WANT TO RETAIN THE SECURITY AND FLEXIBILITY OF PAPER-BASED COMMUNICATIONS.

Almost 56% of surveyed U.S. consumers felt that it was easier to track their expenses and manage their finances when the information was printed on paper.[43]

74% of U.S. consumers are concerned that their personal information held electronically is at risk of being hacked, stolen, lost or damaged and keep hard copies of important documents filed at home.[43]

86% of U.S. consumers believe they should have the right to choose how they receive communications from financial organizations and other service providers.

Two Sides North America and Toluna, 2019

Reading print books to toddlers generated a greater parent-child exchange and resulted in fewer distractions than reading an e-book.[44]

Both undergraduates and graduates strongly preferred print over e-books for textbooks and for leisure reading. Journal articles were preferred in electronic form, but articles were often printed out and used for studying and research purposes.[45]

A large international survey with more than 10,000 participants found that for academic reading, a broad majority reported a preference for print, especially when reading longer texts. Interestingly, participants reported that they felt they remembered the material better and were better able to focus when reading in print, compared to when reading digitally.[46]

68% of consumers surveyed in North America, believe print rather than digital is the most enjoyable way to read a book. In Canada, for the 25- to 34-year old age group, the number rose to 71%. In the U.S., 65% of consumers find printed magazines most enjoyable and 53% prefer printed newspapers over digital. In Canada, the numbers were 59% and 49%, respectively.[43]

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From newspapers to magazines, from photocopies to leaflets, we believe print and paper cannot be beaten for attractiveness, impact and sustainability.

This booklet only scratches the surface of all the facts surrounding the responsible production and use of print and paper products.

To learn more, visit our website and discover the facts about our industry and our products.

hotgraphics.us

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Notes

This booklet includes the most recent information, statistics and data available at the time of printing.

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