

DOWN TO EARTH™

A PRACTICAL LOOK AT ENVIRONMENTAL ISSUES AND TRENDS

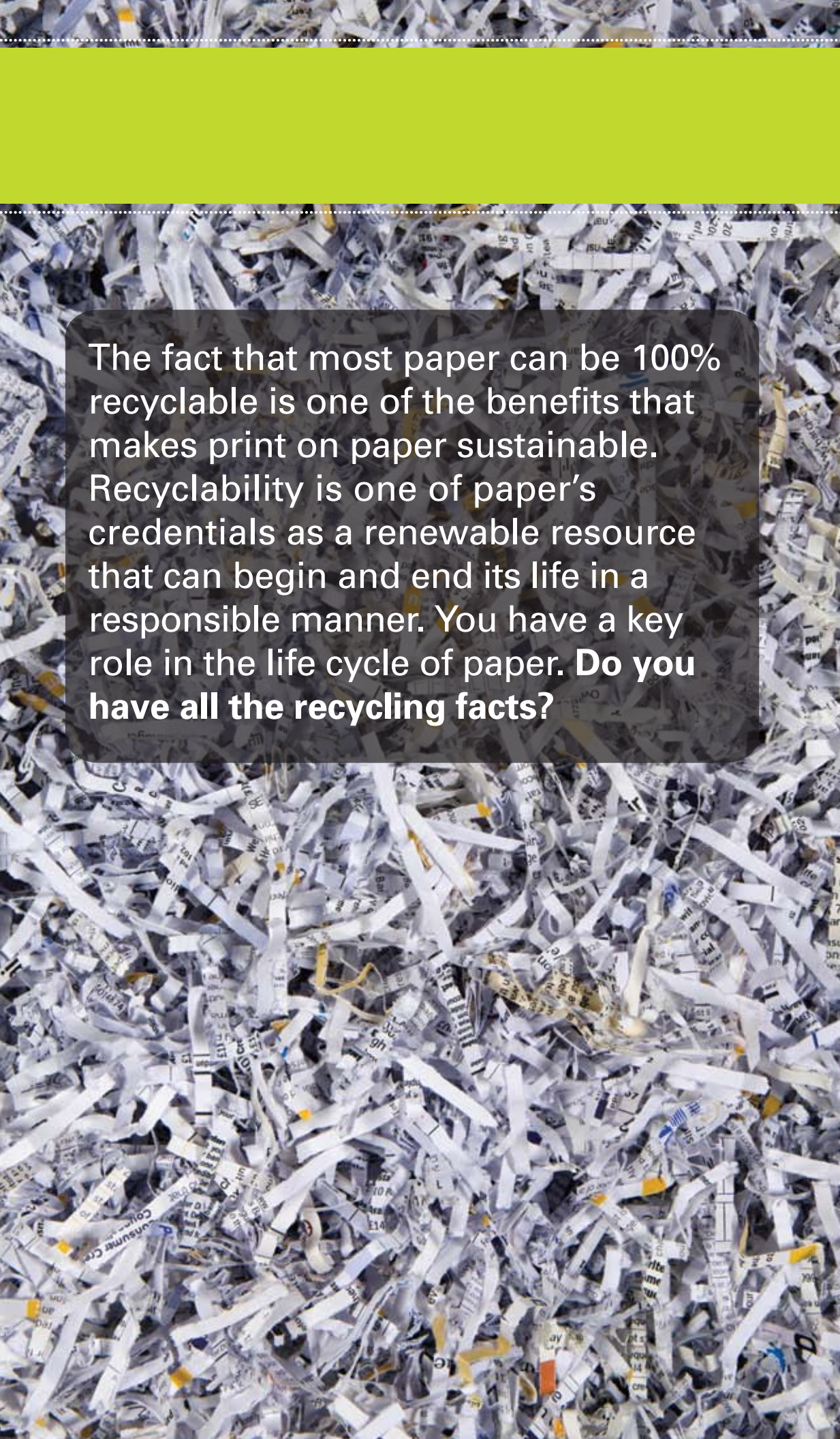


IN THIS ISSUE:

HOW DO YOU FIT IN THE **RECYCLABILITY** EQUATION?

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The fact that most paper can be 100% recyclable is one of the benefits that makes print on paper sustainable. Recyclability is one of paper's credentials as a renewable resource that can begin and end its life in a responsible manner. You have a key role in the life cycle of paper. **Do you have all the recycling facts?**

Paper is recyclable because the wood fibers from recovered paper can be reprocessed up to seven times into new paper and paperboard products. By recycling paper, we're reusing materials that would otherwise have been thrown away. Paper fits the criteria for successful recyclability because it begins its life as a natural product and because the systems and technology exist to recover, reprocess and remanufacture wastepaper for use in new products. It's both environmentally and economically responsible.

“A record-high 63.4% of the paper consumed in the U.S. was recovered for recycling in 2009. This is great news for the industry and the environment, and exceeds the industry’s 60% recovery goal three years ahead of schedule. To balance growing global demand for recovered fiber... increasing recovery nationwide remains a priority.”

AF&PA AMERICAN FOREST & PAPER ASSOCIATION

CONSIDER THE ENTIRE SUPPLY CHAIN

FOR OFFICE AND COMMERCIAL PRINTING PAPERS TO BE SUCCESSFULLY RECYCLED DEPENDS on what happens along the entire supply chain. This includes everyone from paper manufacturers to printers, consumers and paper recovery facilities. A better understanding of how paper is recycled helps each player in the supply chain to put best practices into action for optimum recyclability. The way that paper is converted for various uses, the inks used in printing, the amount of non-paper objects put into paper recycling bins and the way paper is collected and sorted in recovery all affect the efficiency of the recycling process.



Recycling works best when several diverse organizations cooperate throughout the life cycle of these products.

DOWN TO EARTH INSIGHT

Although most paper can be 100% recyclable, there are many things that can happen along the way that affect the recycling process – from addition of other materials in converting paper to contamination of paper recycling collection bins. For maximum recyclability, every user in the life of paper should make choices that allow optimum recovery and reuse of the valuable natural wood fibers in paper that make it such a sustainable product.

STEPS IN RECYCLING

RECYCLING PAPER INVOLVES COLLECTING, SEPARATING AND PROCESSING PAPER SO THAT the natural wood fibers can be reused in making new products. Paper for recycling has to be collected separately from other materials, as contamination with anything other than paper makes recycling more difficult or even impossible. The requirements of the papermaker must also be taken into account: a packaging manufacturer can use mixed grades of recovered paper while a manufacturer of graphic paper prefers to use only certain recovered paper grades.

Recycling of paper includes the following steps:

Recovered paper is sorted, shredded, pulped with water and cleaned to remove impurities. Before the recovered paper can be used to manufacture certain grades of paper, the printing inks have to be removed to increase the whiteness and purity. The pulp is then ready to be made into paper. Depending on the grade of paper being produced, recovered fibers are mixed with new pulp from sustainable sources to achieve the best results in the finished product. Once the new paper product is used, it becomes recyclable and the process starts again.

Is paper infinitely recyclable?

Although printing paper is not infinitely reusable, the fibers can successfully be recycled about five to seven times before becoming too short for papermaking. Most studies show that recycling offers more environmental benefits and lower environmental impacts than other end of life options such as landfill and incineration.

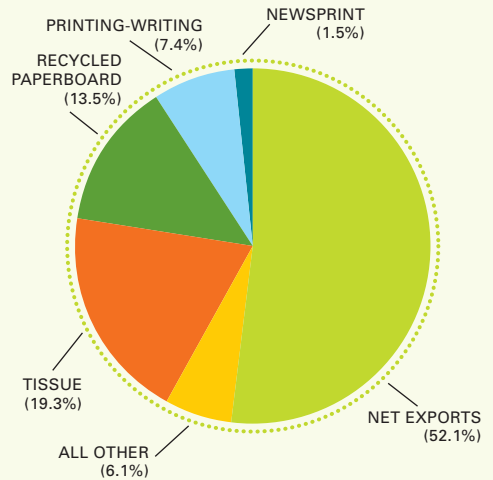
What paper products are recyclable?

These various paper products must be segregated before they can be recycled.

- Computer paper and higher grade (office) papers
- Newspapers
- Pulp substitutes
- Corrugated paper (boxes)
- Catalogs and magazines
- Mixed papers (direct mail, envelopes, unsorted household and office mail)
- Paperboard products
- Paper made from mechanical or non-kraft pulp
- Paper sacks/bags

DID YOU KNOW? According to the AF&PA, the U.S. recovery rate for printing-writing papers has shown steady progress during recent years, climbing from less than 40% in 2002 to more than 60% in 2009.

Where Recovered Printing-Writing Papers Go



Nearly half of the printing-writing paper recovered in the U.S. went to export, while 19% was used by the U.S. tissue paper sector and 13.5% was consumed to make recycled paperboard. Only 7.4% of these recovered papers went to make new printing-writing papers.

Source: AF&PA

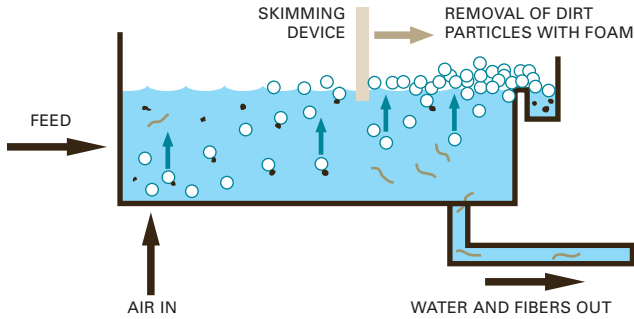
DOWN TO EARTH INSIGHT

Paper recycling is a highly evolved process that has made it possible to recover a high percentage of paper for use in new paper products. Both new fiber and recycled fiber are necessary because the world needs more fiber than is currently available from working forests. Countries like China that do not have ready access to new fiber use a high percentage of the fiber originally created and recovered in the U.S., Europe and Japan.

DEINKING – A CRITICAL STEP IN RECYCLABILITY

IF RECOVERED FIBERS ARE USED TO MANUFACTURE CERTAIN GRADES OF PAPER, THE printing inks have to be removed to increase the whiteness and purity. During this stage the ink is removed from the fiber in a flotation process where air is blown into the solution. The ink adheres to bubbles of air and rises to the surface from where it is separated.

Deinking Schematic



To remove colorant and other unwanted materials from re-pulped papers, air is introduced into the liquid and contaminants attach to the air bubbles, which float the contaminants to the surface.

What about digital inks?

Over time, great strides have been made in removing digital colorants, especially toners, from office papers. Currently digitally-imaged papers make up only a tiny fraction – about 5% – of today’s overall paper waste stream, even when all of the printed paper from the many companies who recycle their office wastepaper is included in the calculation. The other 95% consists of pages printed using analog technologies such as lithography, flexography and gravure.

RECYCLING HAS ITS NATURAL LIMITS

RECOVERED PAPER CANNOT BE USED INDEFINITELY AND IS NOT SUITABLE FOR ALL PAPER grades. Paper recycling needs to be continuously balanced with the use of new fiber for strength and quality, as well as to balance the supply of fiber with demand. As global paper production grows, recovered fibers alone are not enough – for example, the recovered paper market in China alone is now over 60 million tons per year and is projected to be nearly 90 million tons by 2014. ***Demand isn’t the only thing that makes recovered fiber costly. It often costs more to transport recovered fiber to the mill, because it must be shipped, in some cases, up to five times farther than new fiber.*** That longer distance could also result in significantly higher CO₂ emissions.

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Renewing your resources is just as important as reusing your products. Paper lets you do both. By recycling, we recover and reuse the natural wood fibers. By using new fibers, we help ensure that U.S. forests are managed responsibly and that new forests are planted. The private land-owners who supply more than 90% of the wood harvested in the U.S. plant about four million trees each day.

International Paper is one of North America’s largest recyclers of recovered office paper and corrugated boxes with 21 recycling facilities across North America, 12 containerboard mills and a significant national brokerage system. International Paper collects, consumes and markets more than 6 million tons (or approximately 10%) of all paper recovered annually in the United States.

All products from International Paper's Printing & Communications Papers businesses carry third-party certification. When you specify or purchase any of our brands, you tap into International Paper's long-standing commitment to renew, protect and enhance our vital resources. A commitment that started more than 110 years ago. A commitment that's paying off. Visit ipsustainability.com for more information.

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Note: All statistics cited in *Down to Earth* were accurate at the date of publication and may be subject to change.

Sources: American Forest & Paper Association (AF&PA); International Organization for Standardization (ISO); Lyra Research Inc., *The Hard Copies Supplies Journal*, November 2009, Volume 15, Number 11; Resource Information Systems Inc. (RISI), *Outlook for Global Recovered Paper Markets*, 5th Edition, 2010.

Printed on Accent Opaque Cover 100, White, Smooth: 4-color process + 2 spot PMS inks using soy vegetable-based inks, 200 line screen.

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