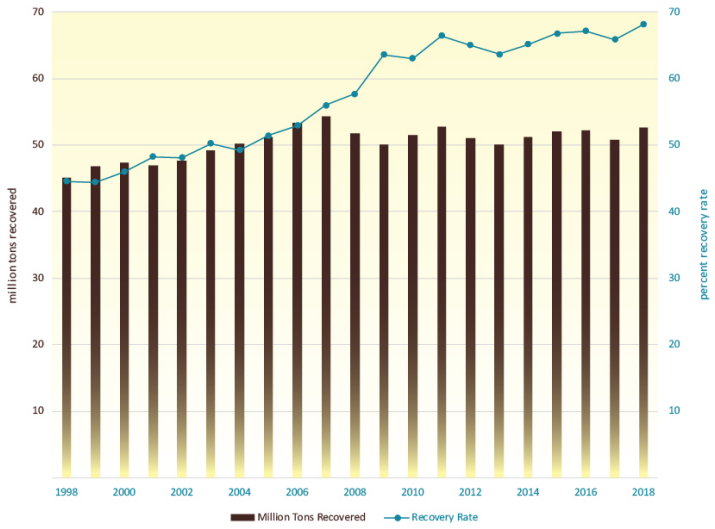
PAPER RECOVERY AND RECYCLING

The benefits of paper recycling include reducing greenhouse gas emissions of methanereleased 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 landfill space.[1]

Paper and Packaging Recovery Rates

In 2018, the recovery rate for all paper and paper-based packaging used in the U.S. was 68.1%.[2,3] Corrugated boxes had a recovery rate of 96.4% in 2018.



Source: AF&PA, 2019.[3]

In 2015, 67% of paper and paperboard products in the U.S. were recovered for recycling (as a percent of generation); more than any other material, including plastics (9%), glass (26%) and metals (34%).[3,4]

Canada recycles almost 70% of its paper and cardboard, making Canada among the top paper recycling countries in the world.[5] The national recovery rate of old corrugated boxes in Canada is estimated at 85%.[6]

In 2016, paper made up the largest portion of material diverted from Canadian landfills (39% of the total amount of waste), followed by organic materials (28%) and the least diverted was plastic at 5%.[7]

Public education about paper recovery rates is needed. A 2019 consumer survey commissioned by Two Sides revealed that only 15% and 20% of American and Canadian consumers, respectively, are aware that the paper recovery rate exceeds 60%.[8]

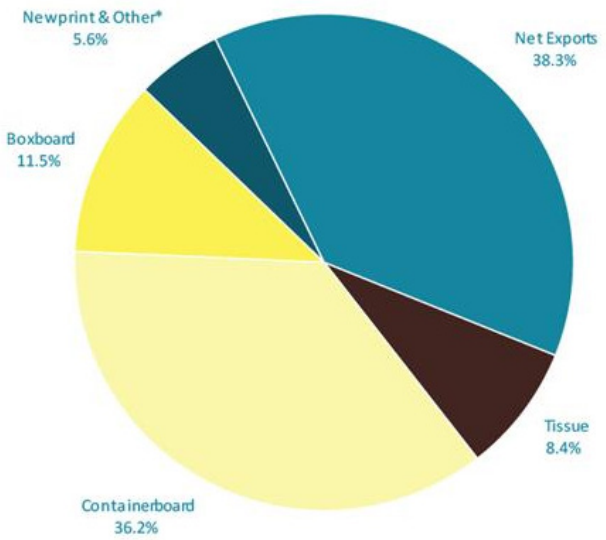
Uses of Recycled Paper

54 to 56% of North American consumers surveyed believe only recycled paper should be used.[6] However, this is not possible because fresh wood fiber from sustainable managed forests is essential to sustain a viable paper industry.

The assumption that more recycled fiber in every product and paper grade is always better for the environment is correct only for the lower grades of paper (ex: paperboard, cardboard). For high-end paper grades (ex: printing and writing), it might take more energy and chemicals to recycle used paper than to use fiber from sustainably grown forests.[13]

Overall, a maximum of 67% to 73% of fibrous inputs used to make paper products can be supplied by waste paper; the rest needs to be virgin fibers.[9] This is because at least 15% of paper products are permanently removed from the fiber cycle such as one-time use products (ex: tissues, sanitary products, medical supplies) and books or files that are stored for long periods of time. In addition, paper can be recycled an average of 4 to 6 times and each time recycling occurs, the fibers become shorter and weaker. Virgin pulp must therefore be introduced into paper production to maintain the strength and quality of the fiber.[10]

The paper recycling segment of the scrap recycling industry collects, sorts, and processes the recovered fiber into specification grade products that were valued at $8.1 billion in the U.S. in 2017. These products are sold and transported to paper mills for production into new paper products.[11]



Source: AF&PA, 2019.[12]

"Approximately 80 percent 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."[4]

In 2018, 36.2 % of the paper collected for recycling in the U.S. was used to produce containerboard (i.e. corrugated boxes), 11.5% to produce boxboard (such as folding boxes and gypsum wallboard facings), 8.4% for tissue and 5.6% for newsprint. Exports to China and other nations accounted for the rest.[12]

This wide variation in how much recycled paper is used for different paper grades is a reflection of their quality. Lower-grade products like cardboard boxes can be made almost entirely from recycled fiber and still meet all their performance requirements such as strength and rigidity. The recovered fiber used to make these products requires minimal processing and produces little waste so is an environmentally effective way to produce new container and boxboard products. At the other end of the spectrum, products such as writing and printing paper require a much cleaner and purer fiber. The production of high-grade fiber from recycled paper requires significant processing (and energy) and also creates more waste.[13]

High-quality papers can be recycled and reused in many subsequent applications but it is not possible to recycle low-quality paper into higher end papers. This is often referred to as "down-cycling."[13]

Sources

1. EPA. 2018. Recycling Basics https://www.epa.gov/recycle/recycling-basics
2. AF&PA. 2018. Sustainability Report. https://www.afandpa.org/docs/default-source/default-document-library/2018sustainabilityreport_pages.pdf?sfvrsn=2
3. AF&PA. 2019. Paper and Paperboard Recovery. https://www.paperrecycles.org/statistics/
4. EPA. 2018. National Overview: Facts and figures on Materials, Wastes and Recycling. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#Recycling/Composting
5. Forest Products Assoc. of Canada. 2015. http://www.fpac.ca/wp-content/uploads/FPAC_Environmental_Brochure.pdf
6. Paper Packaging Canada. 2018. https://paperpackagingcanada.org/recyclable/
7. Government of Canada. 2018. https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/solid-waste-diversion-disposal.html
8. Toluna and Two Sides North America, 2019. Busting the Myths: A study of U.S. and Canadian consumer perceptions and attitudes towards print and paper. https://twosidesna.org/survey
9. Van Ewijk et al. 2017. Global Life Cycle Paper Flows, Recycling Metrics, and Material Efficiency. https://onlinelibrary.wiley.com/doi/full/10.1111/jiec.12613
10. Bureau of International Recycling. http://www.bir.org/industry/paper/?locale=en_US
11. Institute of Scrap Recycling Industries. 2018. https://www.isri.org/recycling-commodities/recycling-industry-yearbook
12. AF&PA. 2019. https://www.paperrecycles.org/statistics/where-recovered-paper-goes
13. SAPPI. 2013. https://cdn-s3.sappi.com/s3fs-public/eq_journal_issue_5.pdf