



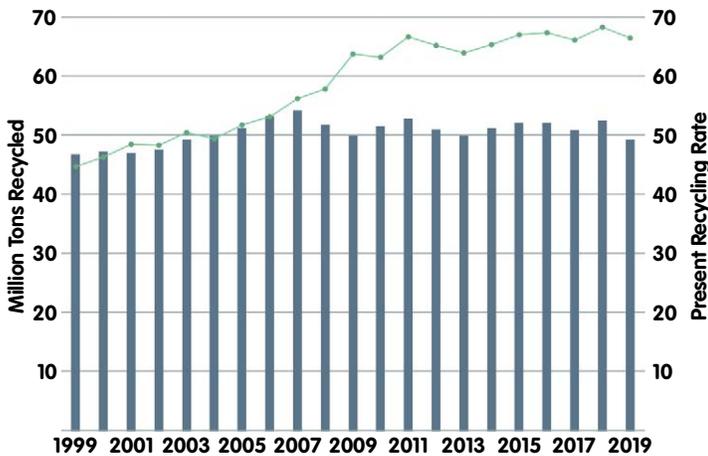
PAPER RECOVERY AND RECYCLING

The Facts

The benefits of paper recycling include extending the supply of wood fiber, saving landfill space, avoiding greenhouse gas emissions of methane released when paper decomposes in landfills [methane has a global warming potential 25 times greater than carbon dioxide], and reducing the amount of energy needed to produce some paper products.¹

Paper and Packaging Recovery Rates

In 2019, the recovery rate for all paper and paper-based packaging used in the U.S. was 66.2%. Corrugated boxes had a recovery rate of 92%.²



Source: American Forest and Paper Association (AF&PA)

According to the most recent government data available (2017), paper and paper packaging is recycled more than any other material in the U.S. solid waste stream, including plastics (8.4%), glass (26.6%) and metals (33.3%).³

Canada recycles almost 70% of its paper and cardboard, making Canada among the top paper recycling countries in the world.⁴ The national recovery rate of old corrugated boxes in Canada is estimated at 85%.⁵

In 2016, paper made up the largest portion of material diverted from Canadian landfills (39% of total waste), followed by organic material (28%). The least diverted was plastic at 5%.⁶

Uses of Recycled Paper

54% to 56% of North American consumers surveyed believe only recycled paper should be used.⁷ However, this is not possible because fresh wood fiber from sustainably managed forests is essential to sustain a viable paper industry. Recycled fiber would not exist without harvesting fresh fiber.⁸

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. 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.⁹

Every time paper is recycled, the fibers get shorter and weaker. After being recycled 5 to 7 times, the fibers become too short to bond into new paper.¹⁰ Virgin pulp must therefore be introduced into paper production to retain the strength and quality of the fiber.

Mills producing fresh fiber use different processes than mills using recycled fiber. As a result, the releases to the environment differ. Recycled fiber production can result in higher or lower releases to the environment than fresh fiber production depending on the type of release, the product being manufactured and the fuel being used.¹¹

Fresh fiber production and processing usually require more energy than recycled fiber processing, but it relies on renewable energy to a greater extent than recycled fiber processing.¹²

The paper recycling segment of the recycling industry collects, sorts and processes the recovered fiber into specification grade products. These products are sold and transported to paper mills for production into new paper products.

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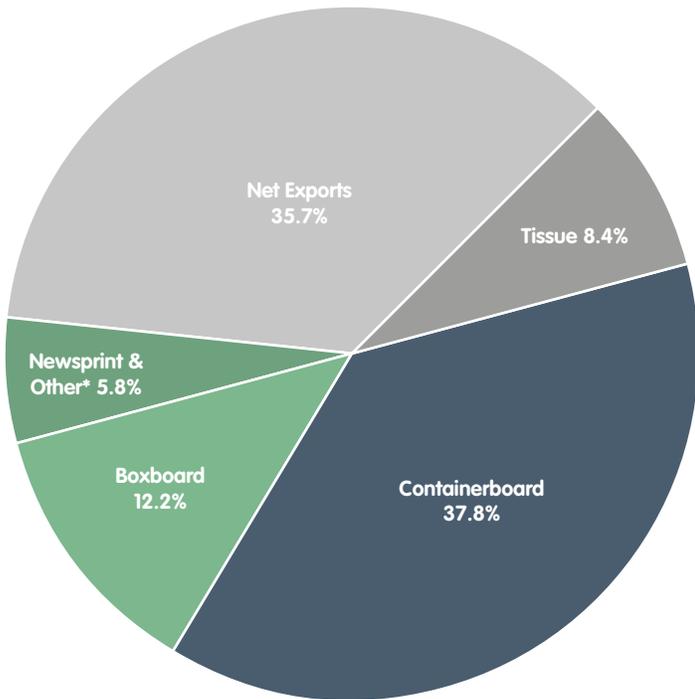
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In 2019, the paper recycling industry's economic impact in the United States was nearly \$34 billion, and the industry supports 154,000 jobs.¹³

In 2019, 37.8% of the paper collected for recycling in the United States was used to produce containerboard (i.e. corrugated boxes), 12.2% to produce boxboard (folding boxes like cereal or medicine boxes, and gypsum wallboard, i.e. drywall/ facings.), 8.4% for tissue and 5.8% for newsprint. Exports to China and other nations accounted for 35.7%, down from 38.3% in 2018.¹⁴



Source AF&PA and the U.S. Census Bureau

Recycling one ton of paper saves 3.3 cubic yards of landfill space.¹⁵

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.¹⁶

In some places, municipalities are increasingly asking households to combine all recyclable materials into a single collection container, a method called single stream, single sort or commingled recycling. Commingled recycling has contributed to higher recovery rates, making more recovered fiber available, but it has also significantly and adversely affected fiber quality. The trend towards commingled collection has also complicated efforts to increase the use of recovered fiber in grades with high fiber quality requirements.

A study of the impact of commingled collection in the UK, for instance, revealed that "...the quality of recovered paper from commingled systems is very far from the quality obtained with selective systems." (Miranda et al. 2013). Generally speaking, recovered fiber can only be used to produce new paper of an equal or lower grade.¹⁷

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