

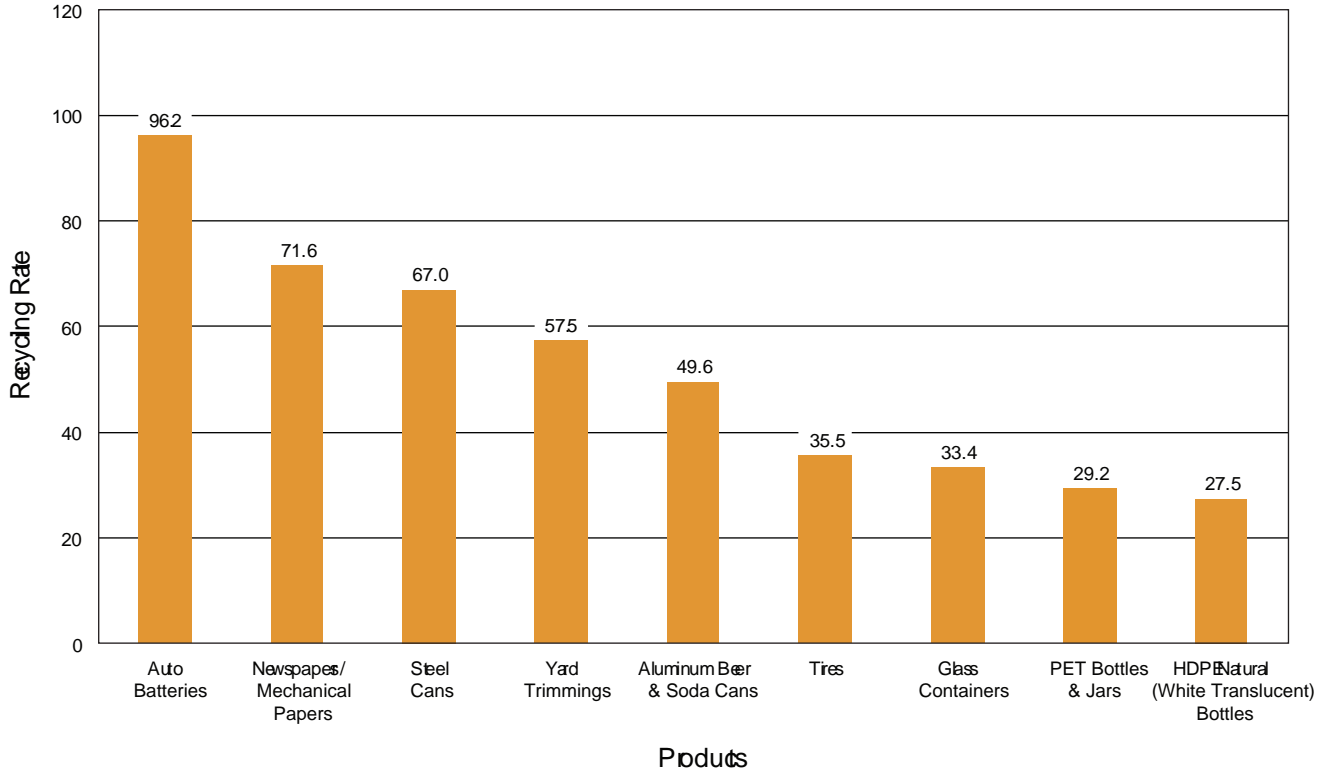


## T M c a S Wa 2010

Our trash, or municipal solid waste (MSW), is made up of the things we commonly use and then throw away. These materials include items such as packaging, food scraps, grass clippings, sofas, computers, tires, and refrigerators. MSW does not include industrial, hazardous, or construction waste.

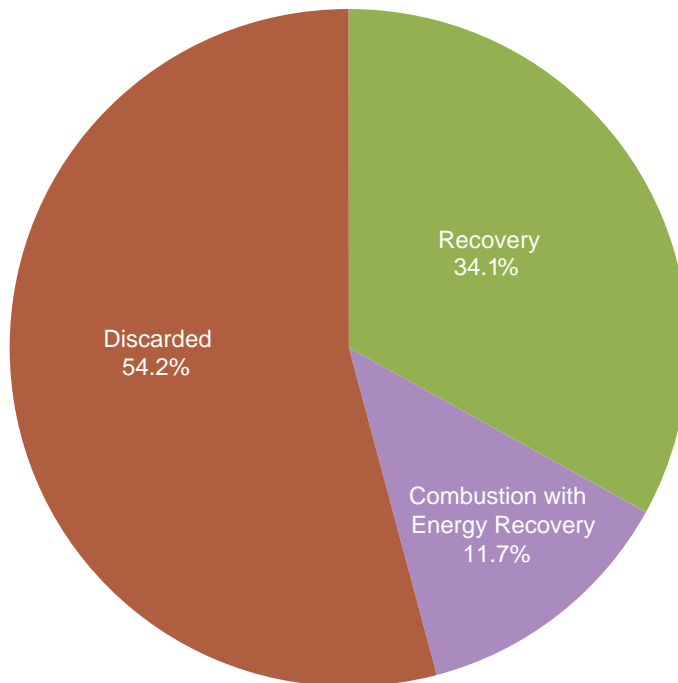
In 2010, Americans recovered almost 65 million tons of MSW (excluding composting) through recycling. Composting recovered over 20 million tons of waste. We combusted about 29 million tons for energy recovery (about 12 percent). Subtracting out what we recycled and composted, we combusted (with energy recovery)

3. Recycling Rates by Product, 2010\*



\*Data from the U.S. Environmental Protection Agency, 2010.

4. Waste Management by Product, 2010



## Source MSW

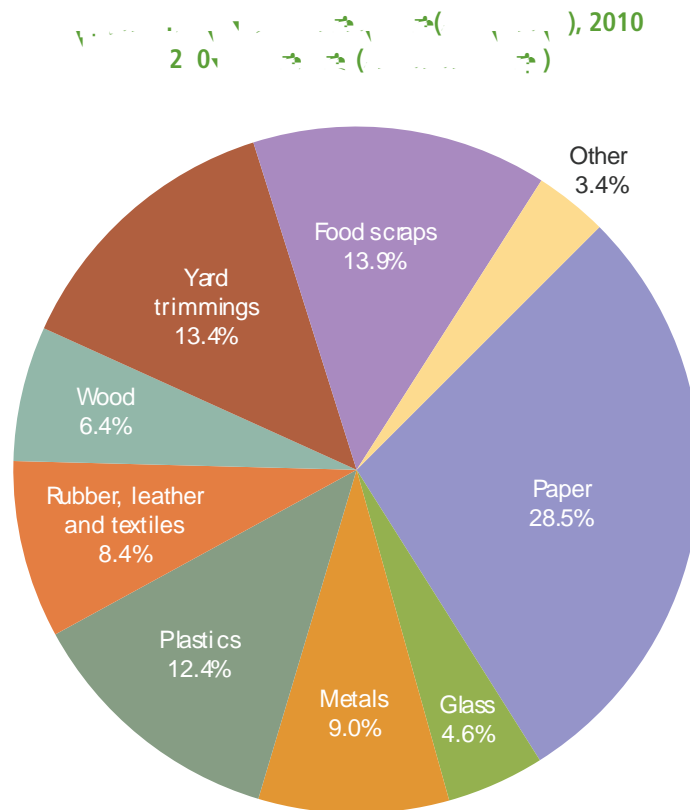
We estimated residential waste (including waste from apartment houses) to be 55 to 65 percent of total MSW generation. Waste from commercial and institutional locations, such as businesses, schools, and hospitals amounted to 35 to 45 percent.

Nationally, we recycled and composted just over 85 million tons of municipal solid waste. This provides an annual benefit of more than 186 million metric tons of carbon dioxide equivalent emissions reduced, comparable to the annual GHG emissions from over 36 million passenger vehicles.

## Analysis MSW

We analyze waste by material, such as paper and paperboard, yard trimmings, food scraps, and plastics, and by major product categories, which include durable goods (such as furniture), nondurable goods (such as paper or clothing), containers and packaging (such as milk cartons and plastic wrap), and other materials (such as food scraps).

Total MSW generation in 2010 was 250 million tons. Organic materials continue to be the largest component of MSW. Paper and paperboard account for 29 percent and yard trimmings and food scraps account for another 27 percent. Plastics comprise 12 percent; metals make up 9 percent; and rubber, leather, and textiles account for 8 percent. Wood follows at around 6 percent and glass at 5 percent. Other miscellaneous wastes make up approximately 3 percent of the MSW generated in 2010 (see Figure 5).



	71.31	44.57	62.5%
	11.53	3.13	27.1%
	16.90	5.71	33.8%
	3.41	0.68	19.9%
	2.10	1.48	70.5%
<b>Total metals</b>	<b>22.41</b>	<b>7.87</b>	<b>35.1%</b>
	31.04	2.55	8.2%
	7.78	1.17	15.0%
	13.12	1.97	15.0%
	15.88	2.30	14.5%
	4.79	1.41	29.4%
<b>Total materials in products</b>	<b>177.86</b>	<b>64.97</b>	<b>36.5%</b>
	34.76		

Significant amounts of material from each category were recycled or composted in 2010. The highest recovery rates were achieved in paper and paperboard, yard trimmings, and metals. We recycled more than 62 percent of the paper and paperboard we generated. Over 19 million tons of yard trimmings were composted, representing almost a five-fold increase since 1990. Recycling these three materials alone kept almost 29 percent of MSW out of landfills and combustion facilities. Recycling amounts and rates (recovery as a percent of generation) for all materials in 2010 are listed in Table 1.



The breakdown, by weight, of waste generated in 2010 by product category is shown in Figure 6. Containers and packaging made up the largest portion of MSW generated: about 30 percent, or almost 76 million tons. The second largest portion came from nondurable goods, which amounted to 21 percent, or about 53 million tons. Durable goods make up the third largest segment, accounting for about 20 percent, or 49 million tons.

The generation and recovery of materials in the product categories, by weight and recovery as a percent of generation, are shown in Table 2. This table shows that the recovery of containers and packaging was the highest of the four product categories, with over 48 percent of the generated materials recycled. Paper products, steel, and aluminum were the most recycled materials by percentage in this category. About 71 percent of paper and paperboard containers and packaging was recycled, including 85 percent of all corrugated boxes. Sixty-nine percent of steel packaging (mostly cans) was recycled. The recycling rate for aluminum packaging was about 36 percent, including almost 50 percent of aluminum beverage containers.







batteries. With a 96 percent recycling rate, lead-acid batteries continue to be one of the most recovered products. Recovery of steel in all durable goods was 27 percent, with high rates of recovery from appliances and other miscellaneous items.

Measured by percentage of generation, products with the highest recovery rates in 2010 were lead-acid batteries (96 percent), corrugated boxes (85 percent), newspapers/mechanical papers (72 percent), steel packaging (69 percent), major appliances (65 percent), yard trimmings (58 percent), aluminum cans (50 percent), and mixed paper (45 percent) (see 2010 MSW Tables and Figures).

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- t Approximately 9,000 curbside recycling programs exist nationwide, up from 8,875 in 2002.
- t About 3,090 community composting programs were documented in 2010, a decrease from 3,227 in 2002.

4. Municipal Solid Waste (MSW) Generation, 2000-2010 (Millions of Tons)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Generation	4.72	4.67	4.64	4.53	4.35	4.43					
Recycled	1.03	1.10	1.15	1.11	1.10	1.15					
Composting*	0.09	0.32	0.38	0.39	0.40	0.37					
Total Materials Recovery	1.35	1.48	1.54	1.51	1.47	1.51					
Combustion with energy recovery†	0.66	0.58	0.58	0.57	0.52	0.52					
Discards to land‡, other disposal‡	2.71	2.61	2.52	2.45	2.36	2.40					
Population (millions)	281.422	296.410	301.621	304.060	307.007	309.051					

\* Composting includes curbside recycling programs, community composting programs, and other programs. † Combustion with energy recovery includes energy recovery from incineration, energy recovery from other combustion processes, and energy recovery from other processes. ‡ Discards to land and other disposal include landfills, incineration without energy recovery, and other disposal methods.

\*\* Sources: U.S. Environmental Protection Agency, Office of Research and Development, Office of Solid Waste, Municipal Solid Waste in the United States: 2010 Data Tables and Figures.

## D MSW

While the number of U.S. landfills has steadily declined over the years, the average landfill size has increased. At the national level, landfill capacity appears to be sufficient, although it is limited in some areas.

The amount of MSW landfilled (including energy recovery) dropped by almost 10 million tons, from 145.3 million to 135.5 million tons in 2010 (see Table 3).

The amount of MSW recycled (including energy recovery and combustion for energy recovery) was 2.40 pounds per person per day, lower than the 2.51 per capita rate in 1960, when virtually no recycling occurred in the United States (see Table 4).

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Recycling has environmental benefits at every stage in the life cycle of a consumer product—from the raw material with which it's made to its final method of disposal. Aside from reducing GHG emissions, which contribute to global warming, recycling also reduces air and water pollution associated with making new products from raw materials. By utilizing used, unwanted, or obsolete materials as industrial feedstocks or for new materials or products, we can each do our part to make recycling work. Recycling also provides significant economic and job creation impacts, a topic discussed at [www.epa.gov/epawaste/consERVE/rrr/rmd/econ.htm](http://www.epa.gov/epawaste/consERVE/rrr/rmd/econ.htm).

In 2010, nationally, we recycled and composted over 85 million tons of MSW. This provides an annual benefit of more than 186 million metric tons of carbon dioxide equivalent emissions reduced, comparable to removing the emissions from over 36 million passenger vehicles. But the ultimate benefits from recycling are cleaner land, air, and water, overall better health, and a more sustainable economy.

## R c

The data summarized in this fact sheet characterizes the MSW stream as a whole by using a materials flow methodology that relies on a mass balance approach. For example, to determine the amounts of paper recycled, information is gathered on the amounts processed by paper mills and made into new paper on a national basis plus recycled paper exported, instead of counting paper collected for recycling on a state-by-state basis. Using data gathered from industry associations, businesses, and government sources, such as the U.S. Environmental Protection Agency's National Materials Inventory Report (NMI), we can track the flow of materials from their source to their final destination.

The benefits of recycling and composting, such as elimination of GHG emissions, are calculated using EPA's WARM methodology. Please see: [www.epa.gov/warm](http://www.epa.gov/warm).

WARM calculates and totals GHG emissions of baseline and alternative waste management practices including source reduction, recycling, composting, combustion, and landfilling. The model calculates emissions in metric tons of carbon equivalent (MTCE), metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>E), and energy units (million Btu) across a wide range of material types commonly found in MSW. EPA developed GHG emissions reduction factors through a life-cycle assessment methodology. EPA's report, *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks* (EPA-530-R-02-006), describes this methodology in detail ([www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf](http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf)).

Full data tables on MSW characterization that support this Report and Summaries of the MSW characterization methodology and WARM are available on the EPA website along with information about waste reduction and recycling. Please see:

[www.epa.gov/epawaste/nonhaz/municipal/msw99.htm](http://www.epa.gov/epawaste/nonhaz/municipal/msw99.htm)

[www.epa.gov/epawaste/conserves/rrr/index.htm](http://www.epa.gov/epawaste/conserves/rrr/index.htm).

In percentage of total MSW generation, recovery for recycling (including composting) did not exceed 15 percent until 1990. Growth in the recovery rate to current levels (34.1 percent) reflects an increase in infrastructure and market demand for recovery over the last decade.



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