

## TECHNOLOGY

# Is This the End of Recycling?

Americans are consuming more and more stuff. Now that other countries won't take our papers and plastics, they're ending up in the trash.

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Plastic, paper, glass, and cardboard at a Recology facility in San Francisco (ROBERT GALBRAITH / REUTERS)

After decades of earnest public-information campaigns, Americans are finally recycling. Airports, malls, schools, and office buildings across the country have bins for plastic bottles and aluminum cans and newspapers. In some cities, you can be fined if inspectors discover that you haven't recycled appropriately.

But now much of that carefully sorted recycling is ending up in the trash.

For decades, we were sending the bulk of our recycling to China—tons and tons of it, sent over on ships to be made into goods such as shoes and bags and new plastic products. But last year, the country restricted imports of certain recyclables, including mixed paper—magazines, office paper, junk mail—and most plastics. Waste-management companies across the country are telling towns, cities, and counties that there is no longer a market for their recycling. These municipalities have two choices: pay much higher rates to get rid of recycling, or throw it all away.

Most are choosing the latter. “We are doing our best to be environmentally responsible, but we can’t afford it,” said Judie Milner, the city manager of Franklin, New Hampshire. Since 2010, Franklin has offered curbside recycling and encouraged residents to put paper, metal, and plastic in their green bins. When the program launched, Franklin could break even on recycling by selling it for \$6 a ton. Now, Milner told me, the transfer station is charging the town \$125 a ton to recycle, or \$68 a ton to incinerate. One-fifth of Franklin’s residents live below the poverty line, and the city government didn’t want to ask them to pay more to recycle, so all those carefully sorted bottles and cans are being burned. Milner hates knowing that Franklin is releasing toxins into the environment, but there’s not much she can do. “Plastic is just not one of the things we have a market for,” she said.

The same thing is happening across the country. Broadway, Virginia, had a recycling program for 22 years, but recently suspended it after Waste Management told the town that prices would increase by 63 percent, and then stopped offering recycling pickup as a service. “It almost feels illegal, to throw plastic bottles away,” the town manager, Kyle O’Brien, told me.

Without a market for mixed paper, bales of the stuff started to pile up in Blaine County, Idaho; the county eventually stopped collecting it and took the 35 bales it had hoped to recycle to a landfill. The town of Fort Edward, New York, suspended its recycling program in July and admitted it had actually been taking recycling to an incinerator for months. Determined to hold out until the market turns around, the nonprofit Keep Northern Illinois Beautiful has collected 400,000 tons of plastic. But for now, it is piling the bales behind the facility where it collects plastic.

This end of recycling comes at a time when the United States is creating more waste than ever. In 2015, the most recent year for which national data are available, America generated 262.4 million tons of waste, up 4.5 percent from 2010 and 60 percent from 1985. That amounts to nearly five pounds per person a day. New York City collected 934 tons of metal, plastic, and glass a day from residents last year, a 33 percent increase from 2013.

*[ Read: ‘We are all accumulating mountains of things’ ]*

For a long time, Americans have had little incentive to consume less. It’s inexpensive to buy products, and it’s even cheaper to throw them away at the end of their short lives. But the costs of all this garbage are growing, especially now that bottles and papers that were once recycled are now ending up in the trash.

One of those costs is environmental: When organic waste sits in a landfill, it decomposes, emitting methane, which is bad for the climate—landfills are the third-largest source of methane emissions in the country. Burning plastic may create some energy, but it also produces carbon emissions. And while many incineration facilities

bill themselves as “waste to energy” plants, studies have found that they release more harmful chemicals, such as mercury and lead, into the air per unit of energy than do coal plants.

And as cities are now learning, the other cost is financial. The United States still has a fair amount of landfill space left, but it's getting expensive to ship waste hundreds of miles to those landfills. Some dumps are raising costs to deal with all this extra waste; according to one estimate, along the West Coast, landfill fees increased by \$8 a ton from 2017 to 2018. Some of these costs are already being passed on to consumers, but most haven't—yet.

Americans are going to have to come to terms with a new reality: All those toothpaste tubes and shopping bags and water bottles that didn't exist 50 years ago need to go somewhere, and creating this much waste has a price we haven't had to pay so far. “We've had an ostrich-in-the-sand approach to the entire system,” said Jeremy O'Brien, director of applied research at the Solid Waste Association of North America, a trade association. “We're producing a lot of waste ourselves, and we should take care of it ourselves.”

As the trash piles up, American cities are scrambling to figure out what to do with everything they had previously sent to China. But few businesses want it domestically, for one very big reason: Despite all those advertising campaigns, Americans are *terrible* at recycling.

About 25 percent of what ends up in the blue bins is contaminated, according to the National Waste & Recycling Association. For decades, we've been throwing just about whatever we wanted—wire hangers and pizza boxes and ketchup bottles and yogurt containers—into the bin and sending it to China, where low-paid workers sorted through it and cleaned it up. That's no longer an option. And in the United States, at least, it rarely makes sense to employ people to sort through our recycling so that it can be made into new material, because virgin plastics and paper are still cheaper in comparison.

Even in San Francisco, often lauded for its environmentalism, waste-management companies struggle to keep recycling uncontaminated. I visited a state-of-the-art facility operated by San Francisco's recycling provider, Recology, where million-dollar machines separate aluminum from paper from plastic from garbage. But as the Recology spokesman Robert Reed walked me through the plant, he kept pointing out nonrecyclables gumming up the works. Workers wearing masks and helmets grabbed laundry baskets off a fast-moving conveyor belt of cardboard as some non-cardboard items escaped their gloved hands. Recology has to stop another machine twice a day so a technician can pry plastic bags from where they've clogged up the gear.



Bales of plastic are piled at a Recology facility in San Francisco. (Alana Semuels / The Atlantic)

Cleaning up recycling means employing people to slowly go through materials, which is expensive. Jacob Greenberg, a commissioner in Blaine County, Idaho, told me that the county's mixed-paper recycling was about 90 percent clean. But its paper broker said the mixed paper needed to be 99 percent clean for anyone to buy it, and elected officials didn't want to hike fees to get there. "At what point do you feel like you're spending more money than what it takes for people to feel good about recycling?" he said.

Then there's the challenge of educating people about what can and can't be recycled, even as the number of items they touch on a daily basis grows. Americans tend to be "aspirational" about their recycling, tossing an item in the blue bin because it makes them feel less guilty about consuming it and throwing it away. Even in San Francisco, Reed kept pointing out items that aren't easily recyclable but that keep showing up at the Recology plant: soy-sauce packets and pizza boxes, candy-bar wrappers and dry-cleaner bags, the lids of to-go coffee cups and plastic take-out containers.

If we can somehow figure out how to better sort recycling, some U.S. markets for plastics and paper may emerge. But selling it domestically will still be harder than it would be in a place such as China, where a booming manufacturing sector has constant demand for materials. The viability of recycling varies tremendously by locale; San Francisco can recycle its glass back into bottles in six weeks, according to Recology, while many other cities are finding that glass is so heavy and breaks so easily that it is nearly impossible to truck it to a place that will recycle it. Akron, Ohio, is just one of

many cities that have ended glass recycling since the China policy changes.

For now, it's still often cheaper for companies to manufacture using new materials than recycled ones. Michael Rohwer, a director at Business for Social Responsibility, works with companies that try to be more environmentally friendly. He told me that recycled plastic costs pennies more than new plastic, and those pennies add up when you're manufacturing millions of items. Items made of different types of plastic nearly always end up in the trash, because recyclers can't separate the plastics from one another—Reed equates it with trying to get the sugar and eggs out of a cake after you've baked it. But because companies don't bear the costs of disposal, they have no incentive to manufacture products out of material that will be easier to recycle.

The best way to fix recycling is probably persuading people to buy less stuff, which would also have the benefit of reducing some of the upstream waste created when products are made. But that's a hard sell in the United States, where consumer spending accounts for 68 percent of the GDP. The strong economy means more people have more spending money, too, and often the things they buy, such as new phones, and the places they shop, such as Amazon, are designed to sell them even more things. The average American spent 7 percent more on food and 8 percent more on personal-care products and services in 2017 than in 2016, according to government data.

*[ Read: The Amazon selling machine ]*

Some places are still trying to get people to buy less. The city of San Francisco, for instance, is trying to get residents to think of a fourth *r* beyond “reduce, reuse, and recycle”—“refuse.” It wants people to be smarter about what they purchase, avoiding plastic bottles and straws and other disposable goods. But it's been tough in a place centered on acquiring the newest technology. “This is our big challenge: How do you take a culture like San Francisco and get people excited about less?” Debbie Raphael, the director of the San Francisco Department of the Environment, told me. The city passed an ordinance that required that 10 percent of beverages sold be available in reusable containers, and it is trying to make reuse “hip” through an online campaign and dedicated website, Raphael said. San Francisco and other Bay Area cities have banned plastic bags and plastic straws, but that option isn't available in many other parts of the country, where recently passed state laws prevent cities from banning products.

But even in San Francisco, the most careful consumers still generate a lot of waste. Plastic clamshell containers are difficult to recycle because the material they're made of is so flimsy—but it's hard to find berries not sold in those containers, even at most farmers' markets. Go into a Best Buy or Target in San Francisco to buy headphones or a charger, and you'll still end up with plastic packaging to throw away. Amazon has tried to reduce waste by sending products in white and blue plastic envelopes, but when I

visited the Recology plant, they littered the floor because they're very hard to recycle. Even at Recology, an employee-owned company that benefits when people recycle well, the hurdles to getting rid of plastics were evident. Reed chided me for eating my daily Chobani yogurt out of small, five-ounce containers rather than out of big, 32-ounce tubs, but I saw a five-ounce Yoplait container in a trash can of the control room of the Recology plant. While there, Reed handed me a pair of small orange earplugs meant to protect my ears from the noise of the plant. They were wrapped in a type of flimsy plastic that is nearly impossible to recycle. When I left the plant, I kept the earplugs and the plastic in my bag, not sure what to do with them. Eventually, I threw them in the trash.

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