

BEYOND RECYCLING

By Alice Loyd

Recycling was never the answer to the problem of waste, which is the inevitable consequence of production and consumption in our industrialized economy. When we ecozoans bought a product, however, we were much happier if it could be recycled to make a new product. Using curbside services provided by our municipality or transporting recyclables to the pickup site, we recycled faithfully. We were relieved to be adding less to the waste stream. Our recycling assuaged some of our guilt.

Unfortunately, our recycling amenity is under threat now, and news outlets as well as waste management experts have been covering the story. I'll review it as it has been addressed by these sources, and then consider where we go from here.

In a report published in March of 2016 a [Pew Trust](#) research team commented,

For years, recycling programs seemed like magic. Municipalities, counties and state-run programs were not only improving the environment but spending little to do so and in many cases saving money by not having to pay landfill fees or making money by selling the material to processors who wanted it. Recycling haulers and processors offered low- or no-cost contracts to municipalities and other customers because they wanted to sell the recycled material at what were high—even record high—prices during what Joe Pickard, director of commodities at the Institute of Scrap Recycling Industries (ISRI), called “the super cycle in commodities.”

In April of 2018 Brent Bell, Vice President of Recycling Operations for the company Waste Management, wrote in [WM Media Room](#),

Many of us grew up with a different kind of recycling program than we have today. Back in the day, we separated items at the curb each week, making it easier to process paper, aluminum and plastics into different material streams. All the right things were being recycled. Then in the early 2000s, recycling changed with the arrival of single-stream. Through this process, residents and businesses could put all of their recyclables into a single bin or cart, and those items would then be separated at a sorting facility. Over a short period of time, thanks to the convenience of single-stream, more people began to participate and recycling rates soared to their highest levels. Households were recycling more, and as a result, we were processing millions of tons more for the betterment of our communities and environment. Recycling had entered its boom years.

[Wikipedia](#) suggests several advantages to single-stream collection besides customer convenience. Collection costs are lower because single-compartment trucks are cheaper to purchase and operate, collection can be automated, and collection routes can be serviced more efficiently; it takes a driver less time to collect the recyclables; and it allows single-compartment vehicles to be used to collect recycling and reduces the number of reserve vehicles needed.

Between 2005 and 2014, recycling programs went from covering 29 percent of American communities to 80 percent, and the growth of single-stream recycling tracks with the growth of recycling overall in this country. But, as reported on fivethirtyeight.com, it also pretty closely tracks with skyrocketing contamination rates.

“We get a lot of diapers,” said Anne Germain, vice president of technical and regulatory affairs with the National Waste and Recycling Association. There are also electronics and batteries, plastic grocery bags and Christmas lights—all of which can be recycled, but only through specialty drop-off programs, not the curbside bin. There are perfectly recyclable cans and paper coated in food, grease or cleaning fluids that render them unrecyclable. There are plastic bottles full of glass syringe needles that break open at the sorting facilities like a piñata from hell.

During the magic years, this adulteration was not a significant problem for US recyclers. According to a March 2019 [NPR](#) report on plastics,

China had plenty of capacity to handle plastics and lots of cheap laborers to sort the recyclable materials from the nonrecyclable. By 2016, the US was exporting almost 700,000 tons a year to China alone. Overall, China imported 7 million tons from around the world. About five years ago, the Chinese government started to worry about all this trash coming in. A lot of the plastic was contaminated with stuff that made it difficult and expensive to recycle—paper, food waste, plastic wrap (which is not recyclable). And some of the plastic was hard to recycle and thus not profitable to import.

As documented on citylab.com in April of this year, contamination rates of US recyclables before sorting vary from place to place, but can reach 25 percent or higher.

A February 2019 [Guardian](#) story quotes a spokesperson for China as having told the World Trade Organization in July 2017 that it no longer wanted to be the end point for *yang laji*, or foreign garbage. Whereas previously it had been the destination for about 40 percent of the United States’ paper, plastics, and other recyclables, beginning in 2018 China has banned many scrap materials and has not accepted others unless they meet an extremely strict contamination rate of 0.5 percent or less.

When the ban came into effect in January 2018, China’s imports of scrap paper fell by 44.6 percent compared to one year earlier, according to statistics from China’s General Administration of Customs (GAC) quoted on recyclingtoday.com. In that first month of 2018 imports of plastic scrap dropped by 94.4 percent compared to the last month of 2017. A [Reuters](#) report related information from the same source about scrap metal shipments into China; they fell to 490,000 metric tons in January 2018 compared with a volume of 700,000 metric tons the previous month and 660,000 metric tons in January 2017. When nonmetallic

scrap is included, China's January 2018 import total for scrap materials fell by 50.3 percent compared to January 2017.

"These restrictions are the latest way China is attempting to clean up its environment," was the explanation on the wastedive.com website on January 8, 2019. The comment continued, "The restrictions follow a year of regulatory additions and tweaks on recyclable material import restrictions and bans. Thus far, the US fiber and plastics sectors have been more hard hit by China's restrictions than metals. But this move advances China's stated goal of banning all scrap imports — including metals — by 2020."

In an article published on theatlantic.com on March 5, 2019, entitled "Is This the End of Recycling?", the writer said,

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.

On March 16 a New York Times article stated,

Philadelphia is now burning about half of its 1.5 million residents' recycling material in an incinerator that converts waste to energy. In Memphis, the international airport still has recycling bins around the terminals, but every collected can, bottle and newspaper is sent to a landfill. And last month, officials in the central Florida city of Deltona faced the reality that, despite their best efforts to recycle, their curbside program was not working and suspended it. Those are just three of the hundreds of towns and cities across the country that have canceled recycling programs, limited the types of material they accepted or agreed to huge price increases.

The article on *The Atlantic's* website cited above also said,

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.

Even in San Francisco, long hailed for the high percentage of waste it is able to recycle, the head of the city's waste disposal provider, Recology, has said that the system is failing, according to a theguardian.com article on June 17, 2019. CEO Michael J. Sangiacomo wrote in an op-ed, "The simple fact is, there is just too much plastic—and too many different types of plastics—being produced; and there exist few, if any, viable end markets for the material."

The same *Guardian* article, part of a series on the problems posed by plastic, states,

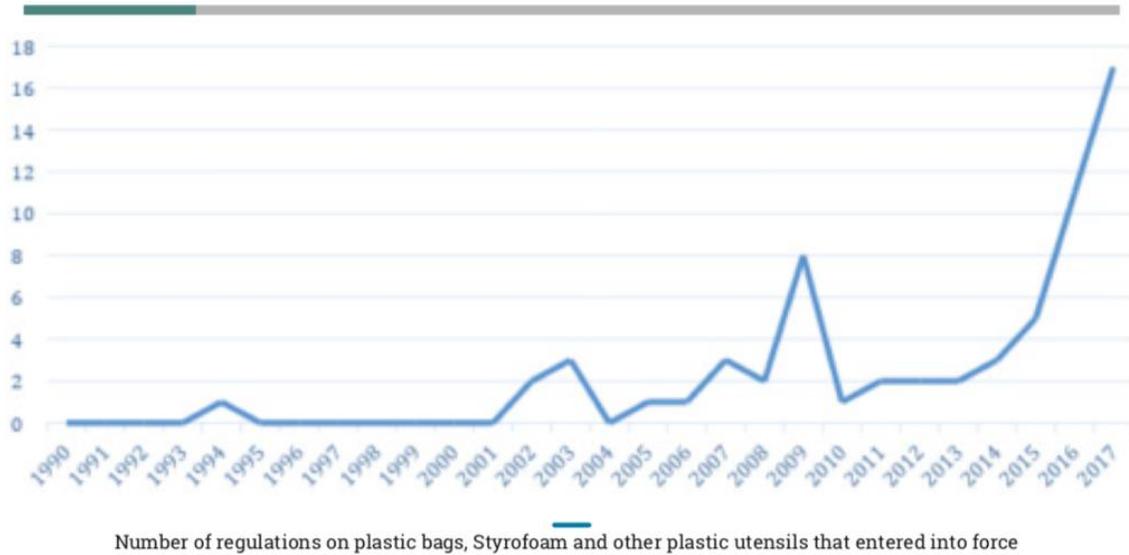
Waste plastic is a commodity, and recycling brokers search across the United States and abroad for buyers who will want to melt the plastic down, turn it into pellets, and make those pellets into something new. In the past, it made economic sense to ship the plastic to Asia, because shipping companies that transport China's manufactured goods to the US end up with thousands of empty shipping containers to carry back. In the absence of American goods to fill them, the companies have been willing to ship out America's recycling at rock-bottom rates.

With China's market all but closed, these ships have been carrying our plastic to Malaysia, Bangladesh, Laos, Ethiopia, Senegal, Turkey, and other similarly unprepared nations already overwhelmed by the increase in their own plastic waste, continues this same *Guardian* article. In response to the situation, in May 2019 187 countries signed a treaty giving nations the power to block the import of contaminated or hard-to-recycle plastic trash. A few countries did not sign. One was the United States, which generated 34.5 million tons of plastic waste in 2015, the last year for which epa.gov has published figures.

Among all the materials we are accustomed to recycle, one has come under special scrutiny—single-use plastics. The [UN Environment Program](http://unep.org) (UNEP) report, "Single-Use Plastics: A Roadmap for Sustainability," lists the most common materials found in waste litter (in order of magnitude): cigarette butts, plastic beverage bottles, plastic bottle caps, food wrappers, plastic grocery bags, plastic lids, straws and stirrers, glass beverage bottles, other kinds of plastic bags, and foam take-away containers. Most are single-use plastics. A June 2018 nationalgeographic.com article says, "Many of these products have a lifespan of mere minutes to hours, yet they may persist in the environment for hundreds of years." The above-referenced Environmental Protection Agency (EPA) site shows that the largest category of plastic we consumed, at over 14 million tons in 2015, was the containers that held the products we bought—packaging, used once and then thrown away.

The following graph from the UNEP paper illustrates increased attention to the problem of single-use plastics on the part of national governments, actions that reflect the concerns of consumers, municipalities, and non-governmental advocates.

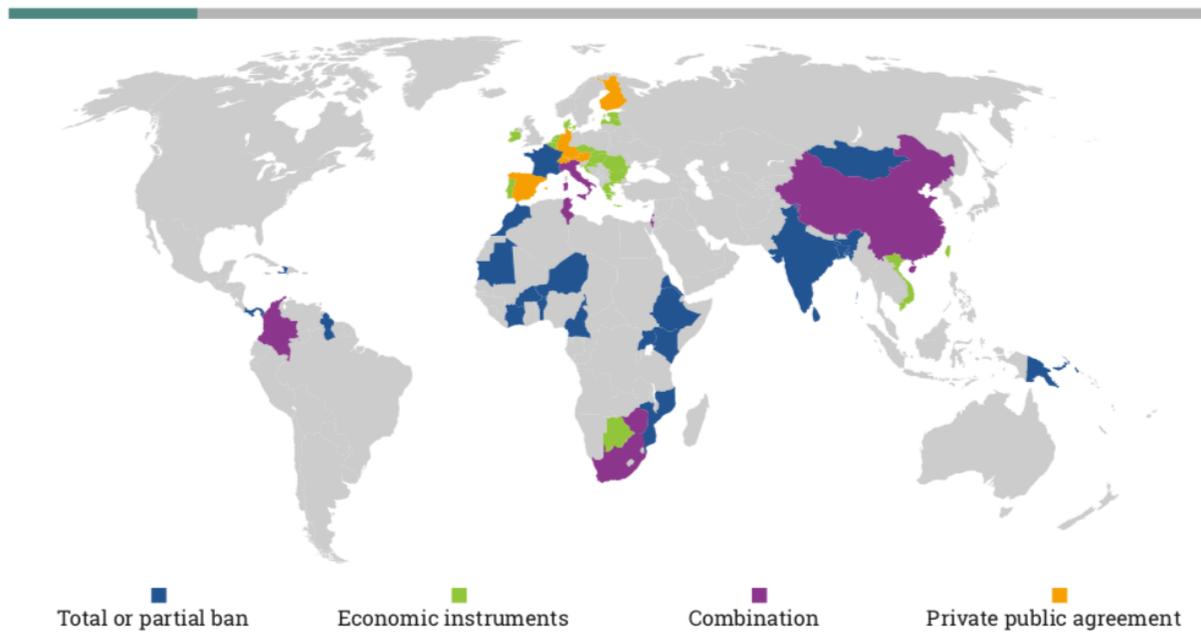
Figure 3.3. Estimated number of new regulations on single-use plastics entering into force at the national level worldwide



Source: Data independently collected by authors

The report also lists these regulations country by country, and where national policies don't exist, as in the United States and most European Union countries, by local governments. The map below highlights bans on two major single-use products.

Figure 3.5. National-level plastic bag bans and Styrofoam regulations

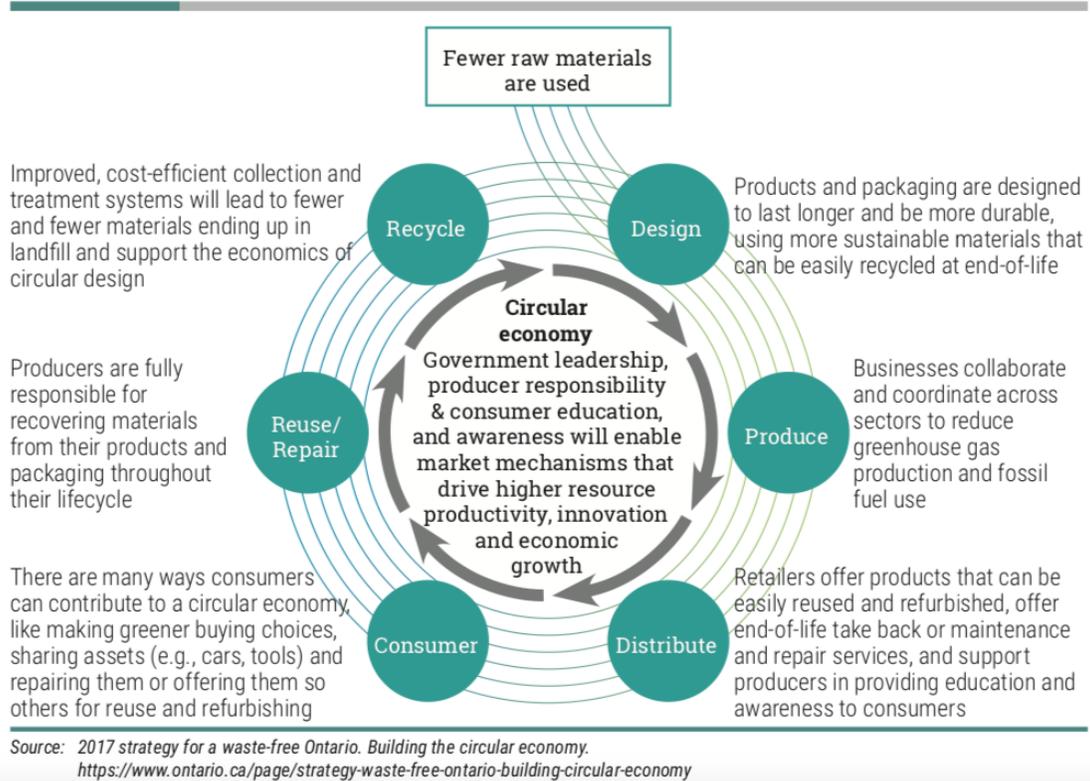


Source: Data independently collected by authors

The UNEP report, as appealingly presented as a mass media article, is a treasure of information about single-use plastic. It is here I learned, for instance, that “biodegradable” plastic items (including single-use plastic bags and containers) break down completely only if exposed to prolonged high temperatures above 50°C (122°F). Such conditions are met in incineration plants, but very rarely in the environment. Therefore, even bioplastics derived from renewable sources (such as corn starch, cassava roots, or sugarcane) or from bacterial fermentation of sugar or lipids (PHA34) do not automatically degrade in the environment and especially not in the ocean. The complete report may be downloaded [here](#).

The message coming through all this information is that recycling in June 2019, even when performed with expertise through the diligent efforts of individuals, companies, and government entities, can no longer be viewed as a major part of the solution to the exponential amount of waste generated by an increasingly industrialized world population. Clean Water Action describes recycling as “magical thinking.” A number of statements I found here and there on cleanwateraction.org express the position clearly: “As a society that over-relies on disposable items, recycling provides a comforting sense that our rampant consumption is compatible with eco-friendliness. But we can't recycle our way out of this mess.” “Actions which provide the assurance that the problem will be solved and that the status quo is acceptable can inoculate us against a big-picture, potentially paradigm-shifting engagement with the problem.” “We are at the end of a feel-good, ‘recycle it away’ era. If we can activate the behavior change, policy, and innovation to respond accordingly, this could be an opportunity dressed as a crisis.” “China’s import ban can be the catalyst for us to recommit to one of [ReThink Disposable’s](#) fundamental values: changing how we consume. Just as there is no ‘away’ when we throw away waste, we can no longer pretend that there is an ‘away’ when we put something in the recycling bin.”

The creation of a circular economy is one vision that changes how we consume. The following chart developed by the initiative [Waste-Free Ontario](#) depicts the key elements involved:



Circular doesn't solve all the problems

A circular economy, as envisioned by the Waste-Free Ontario and Rethink Disposable campaigns, is one in which consumption doesn't require as many raw materials as now and does not leave a trail of waste. Circularity addresses important problems in the industrial economy, yet we ecozoans should strive for more. We need an economy based on minimal exploitation *and* equitable distribution, one that seeks to meet genuine needs rather than indulge momentary appetites. It would encourage us to produce a lot more of what we consume, to engage in creative activities more often than to seek entertainment. We would "make time" as much as make money. We would emphasize sharing, would begin to build what has rarely existed in North America except among indigenous people and new immigrants: caring community. I think the demanding times ahead will call for lifestyles and living arrangements that go far beyond recycling, and now is the hour to "buy into" this more resilient economy.

RECYCLING TIPS

Handling paper, glass, and aluminum

- These two sites give information as well as advice concerning paper: goingzerowaste.com and earth911.org.
- The special problems facing glass recyclers are dealt with very well on these sites: americanrecycler.com and waste360.com.
- Discarded aluminum is more valuable than any other item in the recycling bin. Aluminum.org promotes its recycling, and theworldcounts.org offers a fascinating visual.

Help to reduce the use of single-use plastic!

- The website Water Docs offers an attractive list of “10 Single-Use Plastics You Can Quit Right Now (and What to Use Instead).”
- The Plastic Free Challenge offers suggestions as it also promotes substitute products.
- The poop bag presents a twice-daily problem for conscientious dog owners, but these sites give good, if challenging, guidance: davidsuzuki.org, grist.org, the very-comprehensive gobarking.com, and onegreenplanet.org. The last site informs viewers, “The Federal Trade Commission recently published a press release stating that at least 20 manufacturers of dog waste bags have deceptively labeled their products as ‘biodegradable’ and ‘compostable.’”