

The New York Times

Plastic Bags, or Paper? Here's What to Consider When You Hit the Grocery Store



By **Brad Plumer**

March 29, 2019

*Want climate news in your inbox? Sign up here for **Climate Fwd.**, our email newsletter.*

WASHINGTON — The decision by New York State to ban single-use plastic bags from retail stores makes it a good time to revisit everyone's favorite environmental quandary: paper or plastic?

Unfortunately, there's not a simple answer on whether paper or plastic bags are better for the environment. They both have downsides, but there are a few broad lessons to keep in mind when you're hitting the grocery store.

Plastic bags, which often take centuries to decompose, can create a dreadful waste problem even though they're far from the largest source of plastic waste in America — about 12 percent of the total.

On the other hand, paper bags typically require more energy and greenhouse gas emissions to produce, which isn't great from a global warming standpoint.

Reusable bags can be a decent compromise, provided you hold onto them and use them often. Ultimately, though, what you put inside the bag, particularly your food choices, will most likely matter a lot more for the environment than what type of bag you use.

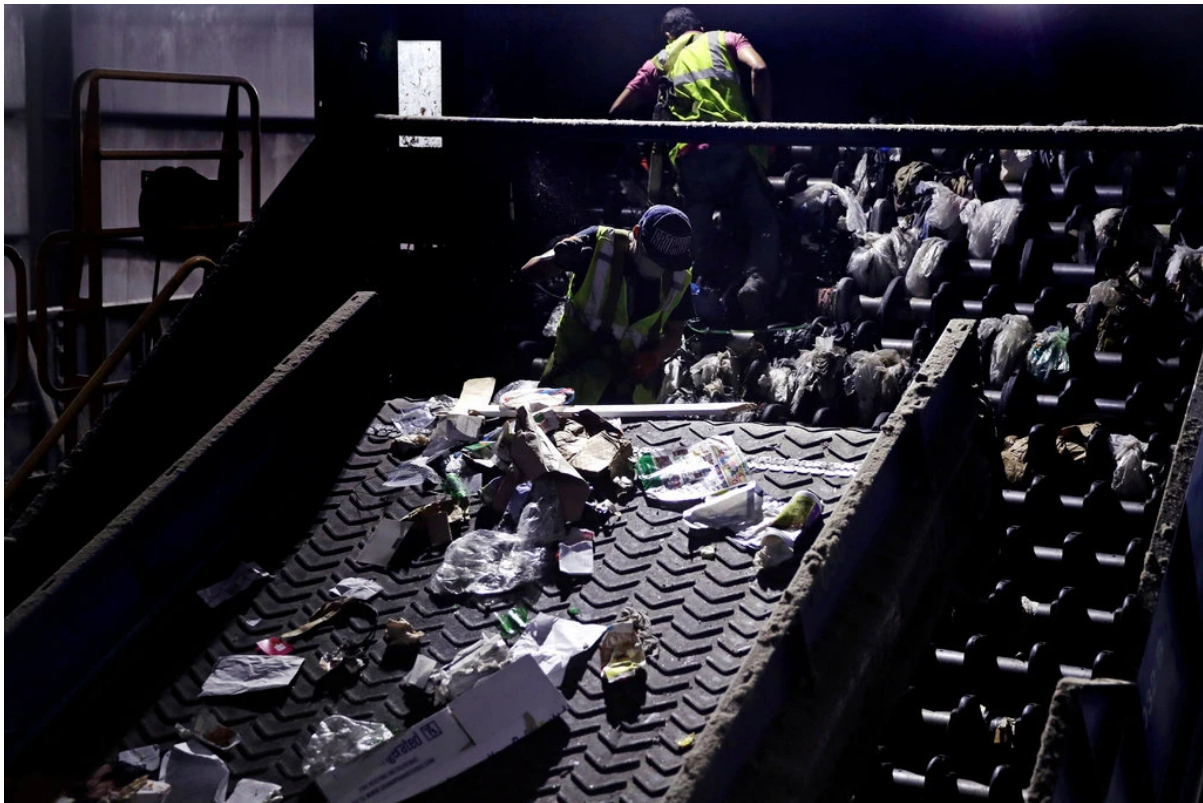
The trouble with plastic bags: litter

American shoppers use more than 100 billion lightweight polyethylene plastic bags each year, and only a small portion are ever recycled. Most recycling centers can't deal with them — they just clog up the machinery — and so the majority of plastic bags end up in landfills, where they can take up to 1,000 years to degrade.

To be fair, a plastic bag doesn't cause too much harm sitting in a landfill. The bigger problem arises when people don't dispose of their bags properly, and the plastic ends up fluttering around in the wild, clogging up waterways and threatening wildlife.

San Jose, Calif., for instance, found that plastic bags made up about 12 percent of the litter in its creeks before implementing a local bag ban in 2012. And, just last week, a dead sperm whale washed ashore in Indonesia with two dozen plastic bags in its gut, along with other trash.

So, even though plastic bags are only a small fraction of America's overall plastic trash, they've become a highly visible sign of waste.



Workers removing plastic bags from clogged rollers at a recycling plant in Westborough, Mass. Charles Krupa/Associated Press

The trouble with paper bags: carbon emissions

So does that mean paper bags, which degrade more easily, are a better option? Not necessarily. Climate change has become the biggest environmental issue of our time, so it's worth looking at things from an emissions standpoint. And on that score, paper bags fare worse.

Even though paper bags are made from trees, which are, in theory, a renewable resource, it takes significantly more energy to create pulp and manufacture a paper bag than it does to make a single-use plastic bag from oil.

Back in 2011, Britain's Environment Agency conducted a life-cycle assessment of various bag options, looking at every step of the production process. The conclusion? You'd have to reuse a paper bag at least three times before its environmental impact equaled that of a high-density

polyethylene plastic bag used only once. And if plastic bags were reused repeatedly, they looked even better.

Paper bags can more easily be recycled or even composted, but the British study found that even these actions didn't make a huge difference in the broader analysis. Unless you're reusing your paper bags a lot, they look like a poorer option from a global warming standpoint.

Reusable bags are a decent option — if you actually reuse them

That same British analysis also looked into reusable options, like heavier, more durable plastic bags or cotton bags. And it found that these are only sustainable options if you use them very frequently.

Making a cotton shopping bag is hardly cost-free. Growing cotton requires a fair bit of energy, land, fertilizer and pesticides, which can have all sorts of environmental effects — from greenhouse gas emissions to nitrogen pollution in waterways.

The study found that an avid shopper would have to reuse his or her cotton bag 131 times before it had a smaller global warming impact than a lightweight plastic bag used only once. And, depending on the make, more durable plastic bags would have to be used at least 4 to 11 times before they made up for their heftier upfront climate costs.

So if you're going to opt for a reusable bag for environmental reasons, make sure you actually reuse it — often.



David McNew/Getty Images

What's in the bag most likely matters more than the bag itself

It never hurts to think about bag choices. But keep in mind that if you're going to the grocery store, the food you purchase and place in that bag probably has a vastly bigger effect on the environment than whatever you use to haul it home.

Our global food system, after all, is responsible for one-quarter of humanity's planet-warming greenhouse gas emissions — with meat and dairy having a disproportionately large impact. By contrast, packaging makes up only about 5 percent of the food system's footprint. Compared with, say, the effects of clearing away vast swaths of forest to grow feed or raise livestock, our bags are a much smaller deal.

Put another way, a pound of beef bought at the supermarket will have roughly 25 times the global warming impact as the disposable plastic bag it's carried in. So if you're looking for ways to slim down your personal carbon footprint, taking a closer look at your dietary choices isn't a bad place to start.

For more news on climate and the environment, follow @NYTClimate on Twitter.

Brad Plumer is a reporter covering climate change, energy policy and other environmental issues for The Times's climate team. @bradplumer

A version of this article appears in print on March 29, 2019, on Page A25 of the New York edition with the headline: Paper or Plastic? Your Choice of Bag Matters Less Than What's Inside