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## Paper or Plastic? A New Look at the Bag Scourge

*Improved Recycling Options Lessen Plastic's Stigma, Even as Cities and States Consider Imposing Bans or Taxes*

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By JEFFREY BALL

When plastic grocery bags were introduced some 30 years ago, they were touted as light, long-lasting and cheap. They caught on so well that hundreds of billions are dispensed each year, creating a modern menace that often winds up nestled in trees, stuck in sewers and drifting in oceans.

### Photos: Bagging the Problem



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recycled -- is becoming less persuasive as more cities start accepting plastic bags in curbside recycling programs.

That makes the cash-register question -- paper or plastic? -- more vexing than ever. "It

Faced with the growing blight, countries from Ireland to China and cities from San Francisco to Washington, D.C., have moved to ban or tax their use. On Monday, a United Nations official called for outlawing them world-wide. Said Achim Steiner, executive director of the U.N. Environment Program: "There is simply zero justification for manufacturing them anymore, anywhere."

But nothing is simple in the push to protect the planet. There is growing evidence that the production, use and disposal of plastic bags put less burden on natural resources than paper bags. Meanwhile, a knock against plastic bags -- that they can't be conveniently



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depends on what environmental issues you see as being more important," says Lisa Mastny, who directs the consumption project at the Worldwatch Institute, an environmental group. "The things you can see in your daily life tend to create more of an emotional response than the things that are in the background."

What Ms. Mastny would prefer -- and what most studies agree is most beneficial to the environment -- is for shoppers to bring their own reusable bags to the grocery store. A reusable bag is better for the environment regardless of what it is made from, as long as it is used at least four times, according to a 2004 study by the French retailer Carrefour.

Still, most American consumers take plastic bags for granted. Sandi Palmer, a 34-year-old hospital secretary in Preston, Idaho, figures she goes through five or 10 of them each week, which estimates say is roughly in line with the average American. She typically reuses the bags as wastebasket liners, and then throws them away. The idea of banning or charging for disposable plastic bags to encourage the use of reusable sacks is "ridiculous," she says. "Why are they making the bag an issue?"

### Paper vs. Plastic

Various studies have examined whether paper or plastic grocery bags are environmentally friendlier. The studies that look specifically at grocery bags generally conclude that paper bags produce less of a litter problem, but that plastic bags consume less energy and water and produce less pollution, including greenhouse-gas emissions. So the choice is a tradeoff between environmental priorities. Virtually all studies say the environmentally friendliest option is to choose a reusable grocery bag, and to reuse it many times, regardless of what that bag is made of. *See a selection of recent studies below.*

This [study for the government of South Africa](#) evaluates a proposed plastic bag ban that took effect May 2000.

This [2000 study sponsored by European paper-bag producers](#) looks not at grocery bags, but at larger shopping bags.

A [2004 study by EuroCommerce](#), a European business group, evaluates different strategies to reduce use of plastic bags.

This 2005 study for the Scottish government ([Volume 1](#), and [Volume 2](#)) concludes that while reusable bags are preferable, paper bags "have a greater negative environmental impact than conventional plastic carrier bags."

Paper producers [published this rebuttal](#) to the 2005 report for the Scottish government, saying it drew inapplicable data from this [2004 study sponsored by French retailer Carrefour](#). (In French)

This [2007 study sponsored by U.S. plastic-bag makers](#) concludes that a standard plastic grocery bag has "significantly lower environmental impacts" than a paper grocery bag.

paper bags, according to the Environmental Protection Agency.

Plastic bags are difficult to recycle for the same reasons they are convenient to use. They are so light they fly out of curbside recycling bins, which often lack lids. If they make it to a recycling plant, the bags tend to wrap themselves around machinery, gumming it up. So, most curbside recycling programs don't accept them.

Some environmentally focused grocery stores, such as Whole Foods, report many of their shoppers have begun switching to reusable bags, though they are still in the minority. More-mainstream grocers say relatively few of their customers use reusable bags.

When plastic supermarket bags were introduced in the 1970s, grocers loved them because they cost less than paper bags and didn't take up as much storage space. Over time, consumers grew attached to the plastic bag's secondary uses -- from carrying a lunch to cleaning up after a dog. Today, most grocery bags dispensed in the U.S. are plastic.

Plastic bags make up only a tiny portion of the trash headed for landfills. Studies carried out in San Francisco have found they account for just a few percentage points of all the pieces of street litter in the city, less than chewing gum or cigarette butts. But because they blow and drift so easily, bags are highly visible, and they become traps for fish and birds.

Another problem with plastic bags is that they are rarely recycled. The plastics industry says more than 90% of Americans reuse their bags at least once. But they are recycled at less than one-third the rate of

### About Jeffrey Ball

Jeffrey Ball, The Wall Street Journal's environment columnist, has written the Power Shift column a decade of experience about energy and the environment. He has covered the energy industry from the Journal's Detroit bureau and the Dallas bureau. His reporting focuses on the efforts to change the way society consumes fossil fuels. Power Shift, appearing in the Journal every other Friday, is a no-nonsense tour of the new energy-and-environment scene. Jeffrey is a host of ECO:nomics, the Journal's podcast on energy and the environment. He graduated from the University of Texas at Dallas and lives in Dallas with his wife and two daughters.

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Americans traditionally have been able to recycle plastic bags only if they take them back to grocery stores. Supermarkets sell the used bags to companies that specialize in shredding and grinding the sacks into tiny pieces, for eventual use in products such as deck planking.

The roaring economy of the 1990s and early 2000s spurred sales of all kinds of products, and trillions of plastic bags carried them home. Efforts to eradicate the bags quickly followed. Ireland imposed a tax on plastic grocery bags in 2002, as growth spawned a litter problem that, according to the Irish government, threatened the country's "clean, green image." San Francisco became the first U.S. city to ban conventional plastic grocery bags, in 2007. China banned the distribution of free plastic grocery bags in 2008. Whole Foods stopped offering plastic grocery bags in 2008, too, though it still provides plastic bags elsewhere in its stores, such as in the produce section.

Places that have begun charging for plastic grocery bags report rapid and drastic reductions in their use. Ireland says its "plastax" slashed the use of plastic grocery bags in the country by more than 90%. Mitigating that shift is evidence that Irish residents have begun buying more plastic trash-bin liners to replace the grocery bags they formerly got for free. Sean Dunne, an Irish government spokesman, says that is "a small price to pay" for attacking litter.

But paper bags have downsides, too. Since the backlash against plastic began, several studies have sought to compare the environmental effects of plastic and paper grocery bags. Each study is based on certain assumptions -- about the sizes of the bags, for instance, and about the mix of fuels in the countries where the bags are made and used.

Studies sponsored by independent retailers or governments generally agree that paper bags are less of a litter problem, but that plastic bags consume less water and energy, and produce less pollution, including greenhouse-gas emissions. In the end, it is a tradeoff. "There is a popular misconception that paper bags are more environmentally friendly than plastic bags," said a 2005 report for the Scottish government.

Paper-industry officials disagree that their bags are more polluting, and they are preparing their own study.

Another option -- the compostable plastic bag, made of substances such as corn -- is no panacea, either. If it is accidentally recycled, it can contaminate the regular plastic it is recycled with. And to fully degrade, most compostable bags need to be sent to one of the relatively scarce food-waste composting facilities in the U.S.

Increasingly, cities and states seeking greener grocery stores are proposing taxes on all disposable bags. Seattle and Washington, D.C., are considering imposing fees on both paper and plastic bags. Other places, disinclined to saddle their voters with another prohibition or tax, recently have upgraded their curbside recycling programs to accommodate plastic bags.

Recycling rates for plastic bags exceed 30% in some European countries, notably Germany. But getting Americans to recycling their plastic grocery bags, even at home, takes effort.

U.S. cities that accept the bags in their recycling bins typically ask residents to stuff a lot of bags inside one bag, sausage-like, to make the bags easier for recycling workers to handle. It's what industry insiders call a "bag of bags."

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**Mixed Bag**

 <p><b>Paper</b></p> <p><b>Pros</b> Less of a litter problem, because it degrades quickly. Stands up easily in a car trunk. Convenient to recycle.</p> <p><b>Cons</b> Consumes more energy and water, and produces more pollution, than a plastic bag from production through use to disposal, studies say.</p> <p><small>Photos: Associated Press (paper, reusable); Getty Images</small></p>	 <p><b>Plastic</b></p> <p><b>Pros</b> Has handles and is light, so it is easily carried. Consumes less energy and water, and produces less pollution, than paper, studies say.</p> <p><b>Cons</b> A problem if it is discarded as litter, because it endures and can kill wildlife. Less convenient than paper to recycle.</p>	 <p><b>Reusable</b></p> <p><b>Pros</b> Regardless of what material it is made from, it is better for the environment than any disposable bag, studies say.</p> <p><b>Cons</b> Costs money—from less than \$1 in some stores to hundreds of dollars from some designers. Also, it's easy to forget to bring it to the store for each shopping trip.</p>
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