

2018 New Jersey Litter Survey

A Survey of Litter along
94 Roadways

Conducted for

**New Jersey
Clean Communities Council, Inc.**

by

Environmental Resources Planning, LLC

Final Report

July 2018



2018 New Jersey Litter Survey

Appendix A - Litter by Item, Material and Percent

Litter Category	Percent
Vehicle - Rubber	11.0%
Other Paper - Paper	8.9%
Shrink Wrap - Plastic	4.9%
Sweet Snack Packaging - Plastic	4.7%
Water Bottles - Plastic	3.8%
Unbranded Towels/Napkins - Paper	3.0%
Packs, Matches, Lighters - Composite	3.0%
Corrugated Boxes - Paper	2.9%
Block Construction Foam - Foam	2.7%
Cups - Plastic	2.2%
Other Plastics - Hard - Plastic	2.1%
Cup Lids - Plastic	2.1%
Straws/Wrappers - Plastic	2.1%
Glass - Other	1.9%
Vehicle - Composite	1.8%
Unbranded Retail Bags - Plastic	1.7%
Soda Bottles - Plastic	1.7%
Beer Cans - Metal	1.6%
Cups - Paper	1.6%
Cups - Foam	1.6%
Vehicle Debris - Plastic	1.6%
Salty Snack Packaging - Plastic	1.5%
Foil Food Wrappers - Metal	1.4%
Sports Drink Bottles - Plastic	1.4%
Wine/Liquor Bottles - Plastic	1.4%
Clothing - Cloth	1.4%
Construction Materials - Metal	1.3%
Newspaper - Paper	1.2%
Tissues - Paper	1.2%
Soda Cans - Metal	0.9%
Ads/Signs/Cards - Paper	0.9%
Peanut Foam - Foam	0.9%
Beer Bottles - Glass	0.8%
Bottle Caps/Seals - Plastic	0.8%
Branded Retail Bags - Plastic	0.8%
Construction - Plastic	0.8%
Home Articles	0.8%
Broken Bottles - Glass	0.7%
Utensils - Plastic	0.7%
Condiment Packaging - Plastic	0.6%
Sweet Snack Packaging - Paper	0.6%
Zipper Bags - Plastic	0.5%
Construction - Composite	0.5%
Non-Retail Leaf/Trash Bags - Plastic	0.5%
Clamshells - Foam	0.5%

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Litter Category	Percent
Vehicle - Metal	0.5%
Sports Drink Bottles - Metal	0.4%
Toiletries/Drugs - Composite	0.4%
Sweet Snack Packaging - Composite	0.4%
Paper Packing - Paper	0.4%
Plates - Paper	0.4%
Fast Food Carrying Bags - Plastic	0.4%
Cups/Pieces - Plastic	0.4%
Juice Containers - Plastic	0.4%
Large Milk/Juice Containers - Plastic	0.4%
Lottery Tickets - Paper	0.4%
Construction - Wood	0.4%
Beverage Cartons - Paper	0.3%
Fast Food Carrying Bags - Paper	0.3%
Food Jars/Bottles/Cups - Plastic	0.3%
Tea Bottles - Plastic	0.3%
Retail - No Brand - Paper	0.3%
Straws/Wrappers - Paper	0.3%
Food - Composite	0.3%
Food Wrappers - Paper	0.2%
Napkins - Brand - Paper	0.2%
Non-Clothing Fabric - Cloth	0.2%
Clamshells - Plastic	0.2%
Branded Retail Bags - Paper	0.2%
Juice Containers - Aseptic	0.2%
Games/CDs/Recreational Equipment	0.2%
Vehicle Debris - Glass	0.2%
Clamshells - Paper	0.1%
Retail Food/Non-Food/Ice Bags - Plastic	0.1%
Tea Cans - Metal	0.1%
Wine/Liquor Bottles - Glass	0.1%
Boxes - Paper	0.1%
Magazines - Paper	0.1%
Other - Describe	0.1%
Container Lids - Metal	0.1%
Bottle Caps - Metal	0.1%
Aerosol Cans - Metal	0.1%
Six-Pack Rings - Plastic	0.1%
Plates - Foam	0.1%
Food Jars/Bottles/Cups - Metal	0.1%
Construction - Foam	0.1%
Juice Containers - Composite	0.1%
Salty Snack Packaging - Paper	0.1%
Construction Debris - Glass	0.1%
Carpet - Cloth	0.1%
Non-Foam Peanuts	0.1%
Non-Food Containers - Plastic	0.1%

2018 New Jersey Litter Survey

Litter Category	Percent
Condiment Packaging - Paper	0.0%
Syringes/Drug Paraphernalia - Composite	0.0%
Tea Bottles - Glass	0.0%
Wine/Liquor Cans - Metal	0.0%
Bottle Caps/Seals - Paper	0.0%
Cups - Metal	0.0%
Trays - Paper	0.0%
Books - Paper	0.0%
Soda Bottles - Glass	0.0%
Plates - Plastic	0.0%
Juice Cans - Metal	0.0%
Tea Containers - Aseptic	0.0%
Water Cans - Metal	0.0%
Water Bottles - Glass	0.0%
Beverage Cartons - Composite/Other	0.0%
Cups - Composite/Other	0.0%
Trays - Foam	0.0%
Utensils - Metal	0.0%
Sweet Snack Packaging - Wood (e.g. Popsicle Sticks)	0.0%
Salty Snack Packaging - Composite	0.0%
Food Jars/Bottles/Cups - Glass	0.0%
Food Wrappers/Cartons - Plastic	0.0%
Food Wrappers/Cartons - Paper	0.0%
Air-Filled Plastic Cushions - Plastic	0.0%
Furniture - Wood	0.0%
Food - Plastic	0.0%
Trays - Plastic	0.0%
Reusable - Plastic	0.0%
Non-Retail Leaf/Trash Bags- Paper	0.0%
Large Milk/Juice Containers - Aseptic	0.0%
Appliances - Metal	0.0%
Yard Waste - Wood	0.0%
Ceramic - Other	0.0%



Environmental and Economic Highlights of the Results of the Life Cycle Assessment of Shopping Bags

RECYC-QUÉBEC December 2017

This document summarizes the results of the environmental and economic life cycle analysis (LCA) of shopping bags ordered by RECYC QUÉBEC and carried out by the Centre international de référence sur le cycle de vie des produits, procédés et services (CIRAIG).

The objective of the study was to evaluate the potential environmental impacts and costs of the different types of shopping bags present in Quebec.

The results of this study provide a scientific, objective and comprehensive basis on which municipalities considering the banning of conventional plastic bags can make an informed decision.

Bag categories and types

Nine types of shopping bags identified and grouped into two categories were submitted for study.

The environmental profile of the bag life cycle has been established according to four environmental indicators: human health, ecosystem quality, use of fossil resources and abandonment in the environment.

Disposable "or" single-use "bags
Designed to be used only once to carry groceries.

Category	Type of bag	Features
	Conventional plastic	<ul style="list-style-type: none"> High-density polyethylene (HDPE) Plastics # 2 Strapless 17 microns Made in Canada
	Oxodegradable Plastic	<ul style="list-style-type: none"> High-density polyethylene (HDPE) Plastics # 2 Strapless 17 microns Made in Canada
	Compostable bioplastic	<ul style="list-style-type: none"> Starch-polyester blend Straps 20 microns Made in United States
	Thick Plastic	<ul style="list-style-type: none"> Low density polyethylene (LDPE) Plastic # 4 50 microns With cut-out handles Made in Québec
	Paper	<ul style="list-style-type: none"> Unbleached kraft paper Made in the United States from partially recycled fibre

Bags known as "reusable" bags
Designed to be used for larger shopping. Generally larger and more robust than disposable bags.

Category	Type of bag	Features
	Woven PP	<ul style="list-style-type: none"> Polypropylene (PP) Plastic # 5 Made in China
	Non-woven PP	<ul style="list-style-type: none"> Polypropylene (PP) Plastic # 5 Made in China Made from 100% post-consumer recycled plastic
	Cotton	<ul style="list-style-type: none"> Made in China
	Eco-designed bag (Credo bag)	<ul style="list-style-type: none"> Polyethylene (PE) Plastic # 1 Made in Québec (Montréal) Made from 100% recycled content

Summary of LCA Results - Disposable Bags

For disposable bags, the results of the study illustrated in the table below tell us about the potential impacts alternative or replacement bags have on the environment compared to the conventional plastic 17 micron HDPE bag. Namely are the possible replacement bags equivalent to or weaker environmentally than those of the conventional 17 micron HDPE bag used just once. The conventional plastic HDPE thin plastic bag is the reference bag (17 microns).

LCA Results for Disposables: The bioplastic bag and thick plastic bag have impact scores 2 to 11 times and 4 to 6 times greater respectively than the conventional bag.

The paper bag is the least performing bag with 4 to 28 times greater potential impacts than the conventional plastic bag.

Environmental Performance Among the Five Disposable Bags studied.

	Human Health	Quality of ecosystem	Use of fossil resource	Abandonment of the environment
Conventional Plastics	Low impact	Low impact	Low impact	High impact
Oxodegradable	Low impact	Low impact	Low impact	High impact
Bioplastics	High impact	High impact	Medium impact	Low impact
Thick Plastics	Medium impact	Medium impact	High impact	High impact
Paper	High impact	High impact	High impact	Low impact

■ Low impact
 ■ Medium impact
 ■ High impact

The conventional plastic bag made of thin HDPE is the one with the least environmental impacts among the five disposable bags studied, grouping together the oxodegradable plastic bag, the compostable bioplastic bag, the thick plastic bag and the paper bag. The conventional plastic bag has more environmental impact when abandoned in the environment.

The conventional plastic bag has several environmental and economic advantages. Thin and light, its production requires little material and energy. It also avoids the production and purchase of garbage/bin liner bags since it benefits from a high reuse rate when reused for this purpose (77.7%).

The weakness of this type of bag is related to abandonment in the environment. It's very slow to degrade because of the persistence of plastic (polyethylene). Disposable bags made of source plant materials (such as the compostable bioplastic bag from starch-polyester type and the paper bag) have the advantage of being a limited nuisance when abandoned in the environment.

The oxodegradable bag, on the other hand, does not offer an environmental advantage when compared to its non-degradable equivalent the conventional plastic bag; its life cycle being nearly equal to identical. Except that when it is abandoned in the environment, the oxodegradable bag is subject to an environmental accelerated fragmentation into polyethylene particles (PE) invisible to the naked eye and persistent for a long time in the environment.

Some stores display the thick plastic bag as reusable. In order to make this option more environmentally-

friendly than the conventional plastic bag used just once, the thicker plastic bag should be reused between 3 and 6 times to transport groceries.

Summary of LCA Results Reusable bags

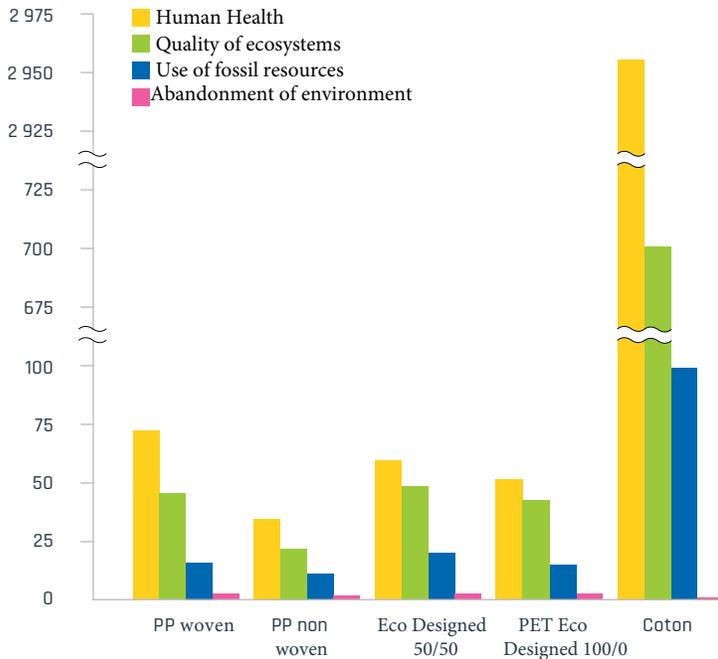
The most common reusable bags in Quebec are woven polypropylene (PP) bags, non-woven, fabric polypropylene (PP) bags and cotton bags. For this study, a prototype ecodesigned bag (the Credo bag) made of 100% recycled PET and manufactured in Quebec has been added. All these bags have the advantage of being generally larger and more robust than disposable bags. LCA Results for reusables: The PP woven and PP non-woven bags need an equivalent number of reuses to equal the thin plastic bag ranging from 16 to 98 and 11 to 59, respectively, depending on the scenario and indicator.

Number of uses needed in order to be better or equivalent than the conventional bag*.

(Number of reuses equivalent to the conventional plastic bag)

As an indicator and on the basis of use by week, the reusable bags must be used at least 35 to 75 times so that their impacts on Life Cycle Environmental Indicators are equivalent to or better than those of the conventional plastic bag.

The cotton bag studied is an option that is not recommended because of its significant impact on the "human health" indicator, requiring between 100 and 2,954 uses for its environmental impact to be equivalent to the environmental impacts of the conventional plastic bag.



What about the cost of shopping bags over their life cycle?

The results show that the main cost of the bag's life cycle occurs at the stage of their acquisition by the retailer or consumer. In the case of conventional plastic bags and the oxodegradable bags, these costs are offset by the avoidance of having to purchase bags to manage household waste when the conventional bag is reused for this purpose. The cost to manage bags at the end of their life are, in turn, low compared to at the total life-cycle cost of the bags.

To view the complete report :

[Click here](#)

* *Refer to the Big Shopping Scenario (p. 15) in the full report.



**Ministry of Environment
and Food of Denmark**
Environmental
Protection Agency

Life Cycle Assessment of grocery carrier bags

Environmental Project
no. 1985

February 2018

impact categories presented higher reuse times than others. Lastly, the very high number of reuse times scored by cotton and composite bags is primarily due only to the ozone depletion impact category, for which the cotton production dataset provides larger impacts than the reference LDPE carrier bag.

Table III. Carrier bags providing the lowest environmental impacts for all the environmental indicators considered. The order in which the bags are listed corresponds to the ranking of their LCA results starting from the lowest impact. Only the three lowest scoring bags are listed. The results refer to the reference flow provided in Table I.

Environmental indicator	Carrier bags providing lowest impacts
Climate change	Paper unbleached, biopolymer, LDPE
Ozone depletion	LDPE
Human toxicity, cancer effects	Paper unbleached, LDPE
Human toxicity, non-cancer effects	Composite, PP, LDPE
Photochemical ozone formation	LDPE
Ionizing radiation	LDPE
Particulate matter	LDPE
Terrestrial acidification	LDPE
Terrestrial eutrophication	LDPE
Freshwater eutrophication	LDPE
Marine eutrophication	PP, LDPE
Ecosystem toxicity	LDPE
Resource depletion, fossil	Paper unbleached, LDPE
Resource depletion, abiotic	PP, LDPE
Water resource depletion	LDPE, biopolymer

Table IV. Calculated number of primary reuse times for the carrier bags in the rows, for their most preferable disposal option, necessary to provide the same environmental performance of the average LDPE carrier bag, reused as a waste bin bag before incineration. The results refer to the reference flow provided in Table I.

	LDPE average, reused as waste bin bag	
	Climate Change	All indicators
LDPE simple, reused as waste bag	0	1
LDPE rigid handle, reused as waste bag	0	0
Recycled LDPE, reused as waste bag	1	2
PP, non-woven, recycled	6	52
PP, woven, recycled	5	45
Recycled PET, recycled	8	84
Polyester PET, recycled	2	35
Biopolymer, reused as waste bag or incinerated	0	42
Unbleached paper, reused as waste bag or incinerated	0	43
Bleached paper, reused as waste bag or incinerated	1	43 ⁴
Organic cotton, reused as waste bag or incinerated	149	20000

⁴ The highest value for bleached paper is set to as minimum be equal to the value for unbleached paper.



Advancing Sustainable Materials Management: 2015 Tables and Figures

Assessing Trends in Material Generation, Recycling,
Composting, Combustion with Energy Recovery
and Landfilling in the United States

July 2018

**Table 23. Products Generated* in the Municipal Waste Stream, 1960 to 2015
(With Detail on Containers and Packaging)
(In percent of total generation)**

Products	Percent of Total Generation								
	1960	1970	1980	1990	2000	2005	2010	2014	2015
Durable Goods	11.3%	12.1%	14.4%	14.3%	16.0%	17.8%	19.7%	20.5%	20.6%
<i>(Detail in Table 14)</i>									
Nondurable Goods	19.7%	20.7%	22.7%	25.0%	26.3%	25.1%	21.2%	20.0%	19.8%
<i>(Detail in Table 18)</i>									
Containers and Packaging									
Glass Packaging									
Beer and Soft Drink Bottles**	1.6%	4.6%	4.4%	2.7%	2.3%	2.6%	2.3%	2.1%	2.0%
Wine and Liquor Bottles	1.2%	1.6%	1.6%	1.0%	0.8%	0.6%	0.7%	0.7%	0.7%
Other Bottles & Jars	4.2%	3.7%	3.2%	2.0%	1.4%	0.9%	0.8%	0.8%	0.8%
Total Glass Packaging	7.0%	9.8%	9.2%	5.7%	4.5%	4.1%	3.7%	3.6%	3.5%
Steel Packaging									
Beer and Soft Drink Cans	0.7%	1.3%	0.3%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	4.3%	2.9%	1.9%	1.2%	1.1%	0.8%	0.9%	0.7%	0.7%
Other Steel Packaging	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
Total Steel Packaging	5.3%	4.4%	2.4%	1.4%	1.2%	0.9%	1.1%	0.9%	0.9%
Aluminum Packaging									
Beer and Soft Drink Cans	Neg.	0.1%	0.6%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.03%	0.05%	0.05%
Foil and Closures	0.2%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Aluminum Packaging	0.2%	0.5%	0.8%	0.9%	0.8%	0.8%	0.8%	0.8%	0.8%
Paper & Paperboard Pkg									
Corrugated Boxes	8.3%	10.5%	11.3%	11.5%	12.4%	12.2%	11.6%	11.8%	11.9%
Other Paper & Paperboard Pkg									
Gable Top/Aseptic Cartons‡			0.5%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Folding Cartons			2.5%	2.1%	2.4%	2.2%	2.2%	2.1%	2.1%
Other Paperboard Packaging	4.4%	4.0%	0.2%	0.1%	0.1%	0.1%	0.0%	Neg.	Neg.
Bags and Sacks			2.2%	1.2%	0.6%	0.4%	0.4%	0.3%	0.4%
Wrapping Papers			0.1%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.
Other Paper Packaging	3.3%	3.1%	0.6%	0.5%	0.7%	0.6%	0.6%	0.7%	0.6%
<i>Subtotal Other Paper & Paperboard Pkg</i>							3.4%	3.3%	3.2%
Total Paper & Board Pkg	16.0%	17.7%	17.4%	15.7%	16.4%	15.6%	15.0%	15.0%	15.1%
Plastics Packaging									
PET Bottles and Jars			0.2%	0.2%	0.7%	1.0%	1.1%	1.1%	1.1%
HDPE Natural Bottles			0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Other Containers	0.1%	0.8%	0.6%	0.7%	0.7%	0.6%	0.7%	0.7%	0.7%
Bags and Sacks			0.3%	0.5%	0.7%	0.6%	0.3%	-	-
Wraps			0.6%	0.7%	1.0%	1.1%	1.3%	-	-
<i>Subtotal Bags, Sacks, and Wraps</i>			0.8%	1.2%	1.7%	1.8%	1.6%	1.56%	1.6%
Other Plastics Packaging	0.1%	1.0%	0.5%	1.0%	1.2%	1.3%	1.8%	1.8%	1.8%
Total Plastics Packaging	0.1%	1.7%	2.2%	3.3%	4.6%	4.9%	5.4%	5.5%	5.5%
Other Packaging									
Wood Packaging	2.3%	1.7%	2.6%	3.9%	3.5%	3.6%	3.9%	3.7%	3.7%
Other Misc. Packaging	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Containers & Pkg	31.1%	36.0%	34.7%	31.0%	31.2%	30.1%	30.1%	29.7%	29.7%
Total Product Wastes†	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	70.9%	70.2%	70.1%
Other Wastes									
Food	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	14.2%	14.9%	15.1%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.3%	13.3%	13.3%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%
Total Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	29.1%	29.8%	29.9%
Total MSW Recycled and Composted - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Generation before materials recycling, composting, combustion with energy recovery or landfilling. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice, and other products packaged in gable top cartons and liquid food aseptic cartons.

† Other than food products.

Neg. = Less than 5,000 tons or 0.05 percent.

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Planet Money THE ECONOMY EXPLAINED

Are Plastic Bag Bans Garbage?

April 9, 2019 8:04 AM ET

GREG ROSALSKY



Fiona Goodall/Getty Images

Editor's note: This is an excerpt of Planet Money's newsletter. You can [sign up here](#).

It was only about [40 years ago](#) that plastic bags became standard at U.S. grocery stores. This also made them standard in sewers, landfills, rivers and [the Great Pacific Garbage Patch](#). They clog drains and cause floods, litter landscapes and kill wildlife. The national movement to get rid of them is gaining steam — with [more than 240 cities and counties](#) passing laws that ban or tax them since 2007. [New York](#) recently became the second U.S. state to ban them. But these bans may be hurting the environment more than helping it.

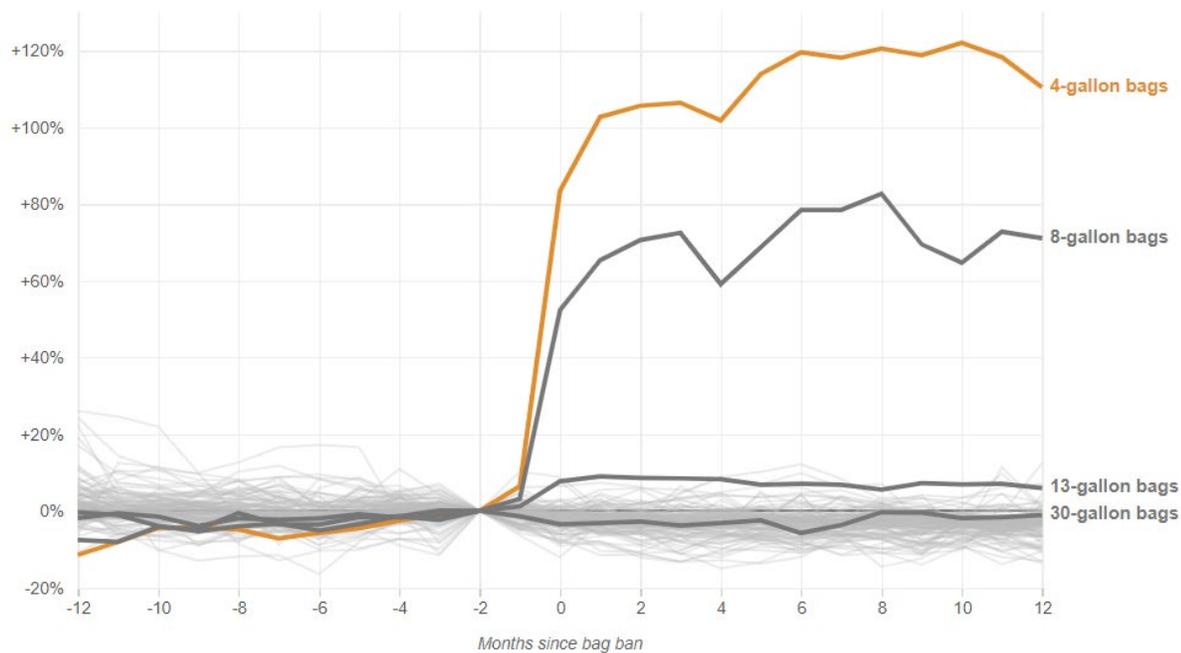
University of Sydney economist Rebecca Taylor started studying bag regulations because it seemed as though every time she moved for a new job — from Washington, D.C., to California to Australia — bag restrictions were implemented shortly after. "Yeah, these policies might be following me," she jokes. Taylor [recently published](#) a study of bag regulations in California. It's a classic tale of unintended consequences.

Paper or plastic?

Before California banned plastic shopping bags statewide in late 2016, a wave of [139 California cities and counties](#) implemented the policy themselves. Taylor and colleagues compared bag use in cities with bans with those without them. For six months, they spent weekends in grocery stores tallying the types of bags people carried out (she admits these weren't her wildest weekends). She also analyzed these stores' sales data.

Taylor found these bag bans did what they were supposed to: People in the cities with the bans used fewer plastic bags, which led to about 40 million fewer pounds of plastic trash per year. But people who used to reuse their shopping bags for other purposes, like picking up dog poop or lining trash bins, still needed bags. "What I found was that sales of garbage bags actually skyrocketed after plastic grocery bags were banned," she says. This was particularly the case for small, 4-gallon bags, which saw a 120 percent increase in sales after bans went into effect.

Trash Bag Sales Jumped After Grocery Bag Bans



Source: Taylor, 2019, "Bag leakage: The effect of disposable carryout bag regulations on unregulated bags." Researcher's own analyses calculated based in part on data from The Nielsen Co. (US) LLC and marketing databases provided through the Nielsen Datasets at the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business. The conclusions drawn from the Nielsen data are those of the researcher and do not reflect the views of Nielsen. Nielsen is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.

Credit: Koko Nakajima and Alyson Hurt/NPR

Trash bags are thick and use more plastic than typical shopping bags. "So about 30 percent of the plastic that was eliminated by the ban comes back in the form of thicker garbage bags," Taylor says. On top of that, cities that banned plastic bags saw a surge in the use of paper bags, which she estimates resulted in about 80 million pounds of extra paper trash per year.

Plastic haters, it's time to brace yourselves. A [bunch](#) of [studies](#) find that [paper bags](#) are actually worse for the environment. They require cutting down and processing trees, which involves lots of water, toxic chemicals, fuel and heavy machinery. While paper is biodegradable and avoids some of the problems of plastic, Taylor says, the huge increase of paper, together with the uptick in plastic trash bags, means banning plastic shopping bags increases greenhouse gas emissions. That said, these bans do reduce nonbiodegradable litter.

Are tote bags killing us?

What about reusable cloth bags? We know die-hard public radio fans love them! They've got to be great, right?

Nope. They can be even worse.

A [2011 study](#) by the U.K. government found a person would have to reuse a cotton tote bag 131 times before it was better for climate change than using a plastic grocery bag once. The Danish government recently did [a study](#) that took into account environmental impacts beyond simply greenhouse gas emissions, including water use, damage to ecosystems and air pollution. These factors make cloth bags even worse. They estimate you would have to use an organic cotton bag *20,000 times* more than a plastic grocery bag to make using it better for the environment.

That said, the Danish government's estimate doesn't take into account the effects of bags littering land and sea, where plastic is clearly the worst offender.

Stop depressing me. What should we do?

The most environment-friendly way to carry groceries is to use the same bag over and over again. According to the Danish study, the best reusable ones are made from polyester or plastics like polypropylene. Those still have to be used dozens and dozens of times to be greener than plastic grocery bags, which have [the smallest carbon footprint](#) for a single use.

As for bag policies, Taylor says a fee is smarter than a ban. She has [a second paper](#) showing a small fee for bags is just as effective as a ban when it comes to encouraging use of reusable bags. But a fee offers flexibility for people who reuse plastic bags for garbage disposal or dog walking.

Taylor believes the recent legislation passed in New York is a bad version of the policy. It bans only plastic bags and gives free rein to using paper ones ([counties have the option](#) to impose a 5-cent fee on them). Taylor is concerned this will drive up paper use. The best policy, Taylor says, imposes a fee on both paper and plastic bags and encourages reuse.

This bag research makes public radio's love for tote bags awkward, doesn't it? It might be weird, though, if we started giving out plastic grocery bags.

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