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Innovative Solutions to Environmental Challenges

White Paper Summary : Analyzing the Impacts of PR Bag Bans and Taxes

1. Environmental rationale used to justify plastic retail (PR) bag ordinances:

- Ordinances will reduce the use of PR bags → which will reduce the number of PR bags found in litter → which will lead to a significant reduction in overall litter.

2. Real impacts and unintended consequences of PR bag ordinances:

- Revenues from bag taxes are not always used to protect the environment.
- Revenues are earmarked for grocers, not the environment, to head-off retail opposition.
- Perception that litter issues are addressed, while littering rates remain largely unaffected.

Review the Record

Alameda County, CA

Ordinance Type: PR bag ban implemented in 2013.

Claim: Banning PR bags will reduce PR bags in stormwater trash and significantly reduce litter.

Assessment: Insignificant reduction in littered PR bags and no change in overall litter.

Austin, TX

Ordinance Type: PR bag ban implemented in 2013.

Claim: Banning PR bags will reduce litter and overall plastic bag use.

Assessment: No reduction in overall litter and an increase in use of thicker plastic bags leading to an increase in the overall volume of landfilled plastic bag waste.

Bay Area Stormwater Management Agencies Association, CA

Ordinance Type: Encouraged member communities to implement PR bag bans in 2012.

Claim: PR bag bans will reduce litter, for which the state should provide trash reduction credits.

Assessment: Flawed methodology significantly overstated the starting quantity of PR bags in litter.

Montgomery County, MD

Ordinance Type: PR bag fee (tax) implemented in 2012.

Claim: PR bag fee will reduce the use of PR and paper bags.

Assessment: Revenues for PR bags sold at retail stores have increased, indicating increased bag use.

San Francisco, CA

Ordinance Type: PR bag ban implemented in 2007 and expanded in 2012.

Claim: Banning PR bags will reduce PR bag litter and litter overall.

Assessment: No reduction in overall litter and a reported increase in PR bag litter in 2009.

San Jose, CA

Ordinance Type: PR bag ban implemented in 2011.

Claim: Banning PR bags will reduce PR bag litter and litter overall.

Assessment: No evidence of PR bag litter reduction. Litter overall has increased.

Washington, D.C.

Ordinance Type: PR bag fee (tax) implemented in 2010.

Claim: PR bag fee will reduce the use of PR bags and the resulting litter.

Assessment: PR bag fee revenues show an increase each year in the number of PR bags sold at retail stores. The percentage of PR bags in Anacostia River trash traps remain unchanged.

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White Paper: Analyzing the Impacts of PR Bag Bans and Taxes

Litter is perhaps the most perplexing of all environmental problems. Trash and recycling collection vehicles, open-top recycling bins and overfilled receptacles add litter to our roadways every day: items destined to become stormwater trash or marine debris.

Yet, efforts to address these problems often end with oversimplified and ineffective ordinances restricting the use of items such as plastic retail bags (PR bags). Such ordinances are unlikely to provide a meaningful reduction in overall litter since these items comprise such a small portion of the litter stream. In addition, bans and taxes do nothing to address underlying littering behaviors, which are component neutral.

Unfortunately, when such legislative restrictions are assessed for performance, the focus is often solely on the banned items and their reduction, while attention is diverted from the other numerous components of litter. Since changes in the amount of PR bags in litter are not being measured scientifically, observations are routinely misinterpreted.

A different problem occurs with data produced from Ocean Conservancy's worldwide beach cleanups. Their surveys show that PR bags are not among the top 10 littered items in the U.S. Despite these results, some environmental groups mischaracterize these statistics, a problem Ocean Conservancy says is difficult to control.¹

The outcome is that officials and the public are often left with distorted ideas about the impacts of minor litter components (bags) while major components, items such as snack wrappers, drink cups/lids and tobacco-related litter, continue to be ignored. This is especially true of litter found on roadways and in recreational and retail areas where littering rates tend to be higher. This is why PR bag restrictions result in minimal reductions of overall stormwater trash and marine debris.

This white paper provides insights into two important aspects of PR bag ordinances:

1. Environmental rationale used to justify plastic retail (PR) bag ordinances:

- Ordinances will reduce the use of PR bags → which will reduce the number of PR bags found in litter → which will lead to a significant reduction in overall litter.

2. Real impacts and unintended consequences of PR bag ordinances:

- Revenues from bag taxes are not always used to protect the environment.
- Revenues are earmarked for grocers, not the environment, to head-off retail opposition.
- Perception that litter issues are addressed, while littering rates remain largely unaffected.

This white paper evaluated the impact of PR bags ordinances in seven communities. A number of other cities have implemented similar ordinances, but have not provided sufficient data for an evaluation.

1. Alameda County, CA
2. Austin, TX

¹ Personal communication with Ocean Conservancy.

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3. BASMAA (San Francisco, CA)
4. Montgomery County, MD
5. San Francisco, CA
6. San Jose, CA
7. Washington, DC

Alameda County, CA

Ordinance Type: PR bag ban implemented in 2013.

Claim: Banning PR bags will reduce PR bags in stormwater trash and significantly reduce litter.²

Assessment: Insignificant reduction in littered PR bags and no change in overall litter.

In 2013, Alameda County banned distribution of PR bags to customers at grocery stores and most retailers. Alameda County's ordinance differs from the California state law in several ways.³ Specifically, in Alameda County:

- Reusable plastic bags are not required to contain recycled content.
- Bioplastic or compostable bags are not considered compliant bags.
- All retail stores that sell perishable or nonperishable goods are included.
- All 'brick and mortar' restaurants and eating establishments are included beginning November 1, 2017.

Alameda County's PR bag ban resulted in the following:

1. Reusable plastic bags that are at least 2.25 mils⁴ thick are allowed and deemed to be compliant as reusable bags under this ordinance,⁵ though thicker bags will easily lead to an increase in the manufacture and use of plastic in carryout bags.
2. Retail stores may stock compliant reusable and paper bags at checkout, but must charge a minimum of 10 cents per bag. All proceeds from the sale of compliant bags are kept by regulated stores. No portion of those funds are used for any litter abatement or other environmental remediation programs.
3. Beginning on November 1, 2017, all public eating establishments are required to stop distribution of single-use plastic checkout bags to customers for their 'take-out food.' There is an exception for plastic bags without handles used to protect food.

Based on the January 2013 ban restricting the use of PR bags, Alameda County issued a stormwater trash report in September 2014. This report was issued, in part, to determine whether the county's PR bag ban had substantially reduced PR bags in litter and effectively reduced stormwater trash compared to the amount found in an earlier 2012 study conducted by BASMAA.⁶ The study's results can be summarized by two major outcomes:

² http://www.swrcb.ca.gov/rwqcb2/water_issues/programs/stormwater/MRP/02-2012/BASMAA/TL_ReductionTracking_Method.pdf

³ Retrieved on March 21, 2017 from: <http://reusablebagsac.org/faqs#n31>

⁴ 1 mil is 1/1,000th of an inch

⁵ Retrieved on March 21, 2017 from: <http://reusablebagsac.org/retail/bag-specifications>

⁶ Bay Area Stormwater Management Agencies Association

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1. The Alameda Study involved re-sampling 40 monitoring sites that had been surveyed as part of the earlier 2012 study by BASMAA. The average accumulation period used in the two studies varied considerably: 341 days for the 2012 study and 86 days for the Alameda study. Once differences in accumulation days were taken into account, Alameda's bag ban had only yielded a reduction of about 20 littered bags annually for 40 sites monitored countywide, less than the volume of one milk jug.
2. Despite ban ordinances in Alameda and its cities, the report concluded that "trash rates for the two studies were not statistically different." In fact, the report also concluded that because the only actions taken were product restrictions (i.e., ordinances) and outreach, a reduction in the level of trash "would not be expected."

However, Alameda County Clean Water Program claimed in 2014 that overall bag purchases by affected retail stores declined by 95 percent⁷, which did not extend to the number of bags tallied at stormwater monitoring sites in Alameda County.

Austin, TX

Ordinance Type: PR bag ban implemented in 2013.

Claim: Banning PR bags will reduce litter and overall plastic bag use.

Assessment: No reduction in overall litter. Increased use of thicker 'compliant' plastic bags.

In March 2013, the City of Austin implemented a single-use bag ordinance. This ordinance states that Austin businesses must provide one of the following three types of bags at checkout: (1) plastic bags (with handles) greater than 4 mils thick; (2) paper bags (with handles) containing 80 percent recycled content; or (3) cloth or other types of reusable bags made out of durable materials. In addition, bags provided by restaurants for take-out food must be comprised of paper unless they are being used to prevent moisture damage (i.e., for soups).

The City released a report in June 2015 to discuss the impact of their bag ban⁸, which included some interesting findings:

1. Plastic bags (i.e. retail) are highly visible but are not a leading component of litter.
2. Plastic bag litter was low before the ordinance passed.
3. While the number of single-use plastic bags may have been reduced, the larger 4 mils bags have replaced them as the 'go-to' standard. This type of plastic bag, along with the paper bag, has a very high environmental cost due to its carbon footprint⁹ compared to the thinner single-use bag now banned in the city.
4. The study found that the ordinance has increased costs for both retailers and their customers. Consumers are being forced to spend more money purchasing reusable bags while some businesses are losing customers to surrounding localities due to the

⁷ Alameda County Clean Water Program. Submittal of FY 2013-2014 Clean Water Program and BASMAA Reports Pursuant to Provision C.16. September 15, 2014.

⁸ Ibid.

⁹ Life Cycle Assessment of Supermarket Carrier Bags, U.K. Environmental Agency, February 2011.

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ordinance. For example, one HEB grocery store in Austin reported losing between \$60,000 and \$70,000 in weekly revenue from shoppers choosing to go to stores that provide single-use PR bags.

5. PR bag litter in Austin is one-quarter the rate of that in Fort Worth. The report assumes that Austin's pre-ordinance rate of plastic bag littering was equivalent to Fort Worth's current rate, but it provides no basis for making this assumption. The percentages being compared (0.12 percent in Fort Worth and 0.03 percent in Austin) are quite small, and thus likely to be statistically insignificant.
6. The report concludes that "[s]imply reducing the usage of a product does not guarantee a positive environmental or economic impact..."
7. The report notes that Austin's ban of single-use plastic bags led to the production and use of 'compliant' thicker plastic bags not covered by the ban, which has resulted in an increased carbon footprint and the consumption and disposal of a higher tonnage of plastic (i.e., plastic bags).

An unintended consequence of this bag ban is that now Austin residents have to purchase additional plastic bags to use as trash can liners since they do not have PR bags to reuse, which they had been receiving at no cost when they purchased their groceries. Austin's bag ban has actually resulted in a higher generation of plastic waste than before the ban went into effect.

Bay Area Stormwater Management Agencies Association, CA

Ordinance Type: Encouraged member communities to implement PR bag bans in 2012.

Claim: PR bag bans will reduce litter, for which the state should provide trash reduction credits.¹⁰

Assessment: Flawed count significantly overstated PR bags in litter.

Bay Area Stormwater Management Agencies Association (BASMAA) is a consortium of eight San Francisco Bay Area municipal stormwater programs. In February 2012, BASMAA released a set of documents assessing progress towards stormwater trash load reductions including a survey of stormwater trash. The report encourages BASMAA members to take trash reduction credits of up to 12 percent for implementing PR bag bans. But the underlying logic for this credit was problematic for a number of reasons:

1. Their survey consisted of using 2-gallon buckets and measuring each trash component's volume separately in inches. However, no attempt was made to account for air space according to the firm that conducted this study. Thus, if the buckets were seven inches tall and one plastic bag in a bucket was four inches tall, the volume of plastic bags was recorded as 4/7 x 2 gallons: a methodology flaw resulting in the significant overstatement of plastic bags in litter.
2. The study authors exploited this flaw to their members by recommending that they be awarded load reduction credits for PR bag bans. For example, San Mateo Public Works Department, a BASMAA member, sent a memo to the Mayor and City Council suggesting

¹⁰ http://www.swrcb.ca.gov/rwqcb2/water_issues/programs/stormwater/MRP/02-2012/BASMAA/TL_ReductionTracking_Method.pdf

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that the City pursue a ban on PR bags based in part upon a credit of up to 12 percent that they would receive towards their litter reduction requirement.¹¹

3. BASMAA weighed littered items during its trash characterization and states that those weights were recorded and transferred into the project database.¹² Yet that meaningful data was excluded from BASMAA's report, precluding the opportunity to review and evaluate the weights of light items such as PR bags, which BASMAA implies might be low enough to dismiss otherwise. In addition, BASMAA found no PR bags at 57 percent of sites surveyed.
4. BASMAA conceded that certain measures have load-reduction credits (e.g., PR bag bans) "where effectiveness data are lacking or load reductions are difficult to quantify," acknowledging that these credits may not achieve the implied results. BASMAA compounded this uncertainty by admitting that "[i]n some cases, information is very limited and assumptions have to be made." And that "assumptions create uncertainties," yet it still encouraged its members to pursue PR bag bans based on these uncertainties and lack of data.
5. BASMAA adjusted some trash generation rates tallied downward¹³, based on the "estimated effectiveness" of PR bag bans that had already been put into place. So, the data presented for analysis most likely understated the actual number of items tallied.
6. BASMAA states its trash reduction goals in terms of percent reductions, but US-EPA states that calculating percent removal "is not recommended and can be very misleading."¹⁴ Based on US-EPA's stormwater permitting regulations, the quantity of trash that must be removed from waterways (TMDL or Total Maximum Daily Load) is expressed in pounds per day and is thus implemented by the states.¹⁵ Clearly, PR bans, which target one of the lightest components of litter, will not do much to help achieve EPA's trash reduction goal (zero trash entering waterways that have a TMDL issued).

Montgomery County, MD

Ordinance Type: PR bag fee (tax) implemented in 2012.

Claim: PR bag fee will reduce the use of PR and paper bags.¹⁶

Assessment: PR bag fee revenues for PR bags sold at retail stores have increased.

¹¹ L. Patterson. February 1, 2012. Single-Use Plastic Carryout Bag Ban and Polystyrene Food Ware Ban. Memorandum. City of San Mateo, CA. Department of Public Works.

¹² Preliminary Baseline Trash Generation Rates for San Francisco Bay Area MS4s. Technical Memorandum. Prepared for Bay Area Stormwater Management Agencies Association (BASMAA) by EOA, Inc. February 1, 2012. (BASMAA 2012)

¹³ Ibid.

¹⁴ US-EPA. NPDES. Three Keys to BMP Performance: Concentration, Volume, and Total Load. Retrieved on March 21, 2017 from: <https://www.epa.gov/npdes/three-keys-bmp-performance-concentration-volume-and-total-load>

¹⁵ Maryland Department of the Environment (MDE) et al. Total Maximum Daily Loads of Trash for the Anacostia River Watershed, Montgomery and Prince George's Counties, Maryland and the District of Columbia: Draft Final. August 2010. P. 40, 44.

¹⁶ <http://www.montgomerycountymd.gov/bag/>

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Montgomery County implemented a 5-cent fee (tax) on the distribution of most carryout bags provided to customers by stores, effective January 2012. The County stated that its goal was to “decrease the use of disposable bags” and that it “hopes we don’t collect any money from the Bag Charge.” However, the results were much different than the County had predicted:

1. Through early 2016, the PR bag fee (tax) already generated revenues of more than \$10.4 million.
2. Montgomery County, in its 2017 National Pollutant Discharge Elimination System (NPDES) annual report to MDE, reported that 62 million non-reusable bags were sold in Montgomery County in FY2016. This equates to tax revenues of \$3.1 million for the most recent fiscal year. The county further noted that “Carryout Bag Tax data analysis to date suggests a slight decline in the number of bags reported per retailer from January 2012 through June 2016, however DEP does not have enough data to definitively report a change in bag usage for the County.”¹⁷
3. A Countystat audit¹⁸ of Montgomery County’s bag tax data between February 2012 and August 2015 showed increased sales of almost 2 million “disposable bags” between 2014 and 2015. Available data for the first three months of 2016 closely tracked 2015 data.
4. This audit also showed that bag usage in grocery stores increased by about 7 percent between 2013 and 2015. The County suggested that some of this increase was due to population growth, but disposable bag use grew by 3.2 percent between 2014 and 2015, while population during that period only grew by 0.9 percent.

So, at the very least, disposable bag use has not been reduced as predicted. Instead, there has been an increase in the number of PR bags sold.

San Francisco, CA

Ordinance Type: PR bag ban implemented in 2007 and expanded in 2012 and 2013.

Claim: Banning PR bags will reduce PR bag litter and litter overall.¹⁹

Assessment: No reduction in overall litter and a reported increase in PR bag litter²⁰ in 2009.²¹

In 2007, the City of San Francisco implemented the first PR bag ban in the country, eliminating plastic bags at large grocery stores.

1. To evaluate any change due to this ban, the City conducted a litter survey in 2007 before the PR bag ban had been put into effect and found that PR bags comprised 0.6 percent of litter.
2. A follow-up survey conducted in 2008, after the City’s bag ban had been in effect for a

¹⁷ Montgomery County NPDES MS4 Permit. FY2016 Annual Report. February 2017. p. 9.

¹⁸ Montgomery County Bag Tax. Countystat Analysis & Independent Verification (FY2013-2015). Dennis Linders. June 30, 2016.

¹⁹ <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances07/o0081-07.pdf>

²⁰ Due, in part, to plastic bags acquired from unregulated stores, some of which were outside of the city.

²¹ <http://www.cawrecycle.org/files/SF2009LitterReportFINAL-Sep15-09.pdf>

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year, showed that PR bags were still 0.6 percent of litter, basically unchanged from the previous year.

3. A second follow-up survey conducted in 2009 showed that PR bags increased as a component of litter and accounted for 1.5 percent of litter, despite the bag ban having been in effect for two years.
4. In 2012, the City expanded their PR bag ban to include all retail stores (as of 10/2012) and all food establishments (as of 10/2013).
5. The City's ordinance also requires a minimum 10-cent fee on allowable checkout bags such as compostable bags, paper bags and reusable bags. There is an exemption made for certain types of bags such as for meats and newspapers. Stores and food establishments retain the 10-cent fee charged to customers. The City has declined to conduct additional follow-up litter surveys.

San Jose, CA

Ordinance Type: PR bag ban implemented in 2011.

Claim: Banning PR bags will reduce PR bag litter and litter overall.²²

Assessment: No evidence of PR bag litter reduction. Litter overall has increased.

San Jose adopted a ban on PR bags in January 2011. The ban, which took effect January 1, 2012, extends to all grocery, pharmacy and retail stores, but exempts restaurants and non-profit reuse organizations. For the first two years, paper bags were sold at 10 cents each. This 10-cent charge was retained by the stores.

1. In 2008, the City of San Jose conducted a litter survey to determine the composition of litter in their city. The survey showed that PR bags comprised 0.4 percent of litter, similar to the results of San Francisco's 2007 and 2008 litter surveys.
2. The following year, the City conducted a different study, specifically surveying known litter hotspots near areas where light components of litter were more likely to accumulate such as fence lines and brush. Even this hotspot survey found that PR bags comprised 4.9 percent of litter.
3. Despite evidence to the contrary, the City decided to support a ban on PR bags. However, the City declined to conduct a comparative follow-up to these litter surveys to determine whether the ban had been effective in reducing litter after all.
4. Subsequent surveys conducted by the City only surveyed a limited number of sites and did not use the scientific and statistically-based methodology employed in the base study conducted in 2008. Thus, the results did not produce comparable data.
5. A City Parks and Recreation memorandum in 2016 noted "a significant increase in litter collected" in 2014-2015 over the previous year. In fact, the total bags of litter collected more than doubled from 4,075 to 9,618 using the same number of volunteers to

²² <https://www.sanjoseca.gov/DocumentCenter/View/20209>

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conduct the litter cleanup.²³ This increase in litter was observed three years after the City's bag ban had been in effect. The report did not conclude why this had occurred.

Although paper bags are not part of the ban, the City's website notes that "Paper bags are also problematic"²⁴ and that they "are not necessarily better, they require much more energy and water to produce and require the cutting of trees to manufacture."²⁵ Therefore, the City also discourages the use of paper bags, whose use may be restricted in the future.

Washington, D.C.

Ordinance Type: PR bag fee (tax) implemented in 2010.

Claim: PR bag fee will reduce the use of PR bags and the resulting litter.²⁶

Assessment: PR bag fee revenues show an increase each year in the number of PR bags sold at retail stores. The percentage of PR bags in Anacostia River trash traps remains unchanged.

The District of Columbia passed a 5-cent bag fee (tax) that took effect in 2010. This fee was supposed to significantly reduce the use of PR bags and reduce litter in the Anacostia River and its tributaries. Instead, it has had an insignificant effect on overall litter and had produced revenues of about \$10 million by early 2015.²⁷ A Washington Post investigative report and review of a related D.C. audit²⁸ revealed the following findings, some raising questions about how bag fee funds have been used:

1. Only about 33 percent of the fund was spent on trash traps to clean the river, rain barrels and rain gardens, green roofs, tree plantings or stream restoration.
2. The largest grant from the fund as of 2015, \$1.2 million, was allocated to send every D.C. fifth-grader on field trips to campsites outside the District, some up to 30 miles from the Anacostia River.
3. Tommy Wells, director of the District Department of the Environment (DDOE), stated that he planned to spend \$79,000 from the fund for boat tours on the Anacostia River.
4. More than \$600,000 of the fund was spent on advertising between 2010 and 2013.
5. Only one new position was created as a result of the fee, while more than \$1.7 million of fund money went to salaries of 17 existing employees. In several cases, the amounts paid to these employees were substantially out of proportion to the time they had spent on fund-related projects.
6. A draft audit concluded that using the fund to pay preexisting salaries may have violated the bag law since the fund cannot be used to replace funding already in place for river-

²³ S. Wolf. April 21, 2016. Anti-Graffiti and Anti-Litter Programs Report. Memorandum. City of San Jose, CA. Parks, Recreation and Neighborhood Services.

²⁴ Retrieved on March 21, 2017 from: <http://www.sanjoseca.gov/index.aspx?nid=1526>

²⁵ Retrieved on March 21, 2017 from: <http://www.sanjoseca.gov/FAQ.aspx?FID=311&NID=1526>

²⁶ <https://doee.dc.gov/page/bag-law-faqs>

²⁷ https://www.washingtonpost.com/investigations/nickel-by-nickel-is-the-dc-bag-fee-actually-saving-the-anacostia-river/2015/05/09/d63868d2-8a18-11e4-8ff4-fb93129c9c8b_story.html?utm_term=.02f9f9bcbbd4

²⁸ Is D.C.'s 5-cent fee for plastic bags actually serving its purpose. Washington Post. May 9, 2015.

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cleaning activities. When questioned about this, D.C. officials removed that finding.

7. A draft audit noted that 43 percent of the fund's expenditures went to administer the program over four years. The final audit omitted the total administrative costs.
8. Although the District claimed an 85 percent decrease in bag use within the first few months, a Washington Post investigative report found that there was little evidence that this had occurred. Wells admitted that was based on a "back-of-the-envelope calculation, which is about as unscientific as possible."
9. According to the D.C. CFO, there was no reliable data for disposable bag use in D.C. So, D.C. officials applied data from a Seattle 2004 waste-composition study, which exceeded federal bag use estimates, suggesting that overestimates of bag use were used to claim a higher level of success than actually achieved.
10. The Anacostia Watershed Society was collecting the same percentage of bags in trash at its Nash Run trash trap in 2015 as it did in 2009 before the bag tax began.

A 2016 D.C. DOEE report²⁹ estimated that there were currently 82,341 bags in the Anacostia River and its tributaries. The DOEE report estimates the effectiveness of various activities in achieving a reduction in trash and the subsequent impact on load reduction.

The data in Table 1 below shows that the 'bag law' has had no impact at all on the reduction of trash overall and virtually no impact on load reduction (trash entering the portion of the Anacostia River for which D.C. is responsible).

Activity	Trash Items Removed		Load Reduction	
	# of Items	% of Items	# of Items	% of Items
Trash Traps	18,453	0.6%	7,431	6.6%
Hotspot Sweeping	144,768	4.4%	72,384	64.3%
Clean-up Events	36	0.0%	5,192	4.6%
Skimmer Boats	1,074,769	32.7%	9,354	8.3%
Clean Teams	2,050,429	62.3%	17,949	15.9%
Bag Law	1,072	0.03%	272	0.2%
Total	3,289,527	100.0%	112,582	100.0%

Table 1 - Impacts of Trash-Reduction Activities

²⁹ District of Columbia Water Quality Assessment. Draft 2016 Integrated Report to the US Environmental Protection Agency and Congress Pursuant to Sections 305(b) and 303(d) Clean Water Act (P.L. 97-117). Department of Energy and Environment. Natural Resources Administration. Water Quality Division. May 2016. p. 50.

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As shown in Figure 1 below, Washington, D.C. reported that revenue from the bag fee has increased each year since the fee's inception.³⁰ Since the bag fee has remained constant, this table suggests that the number of bags sold annually has increased steadily since the bag fee went into effect.

Although the population of D.C. increased 12.1 percent between 2010 and 2015 and 13.1 percent by 2016³¹, the District's bag fee revenues increased by 50 percent as of 2015.

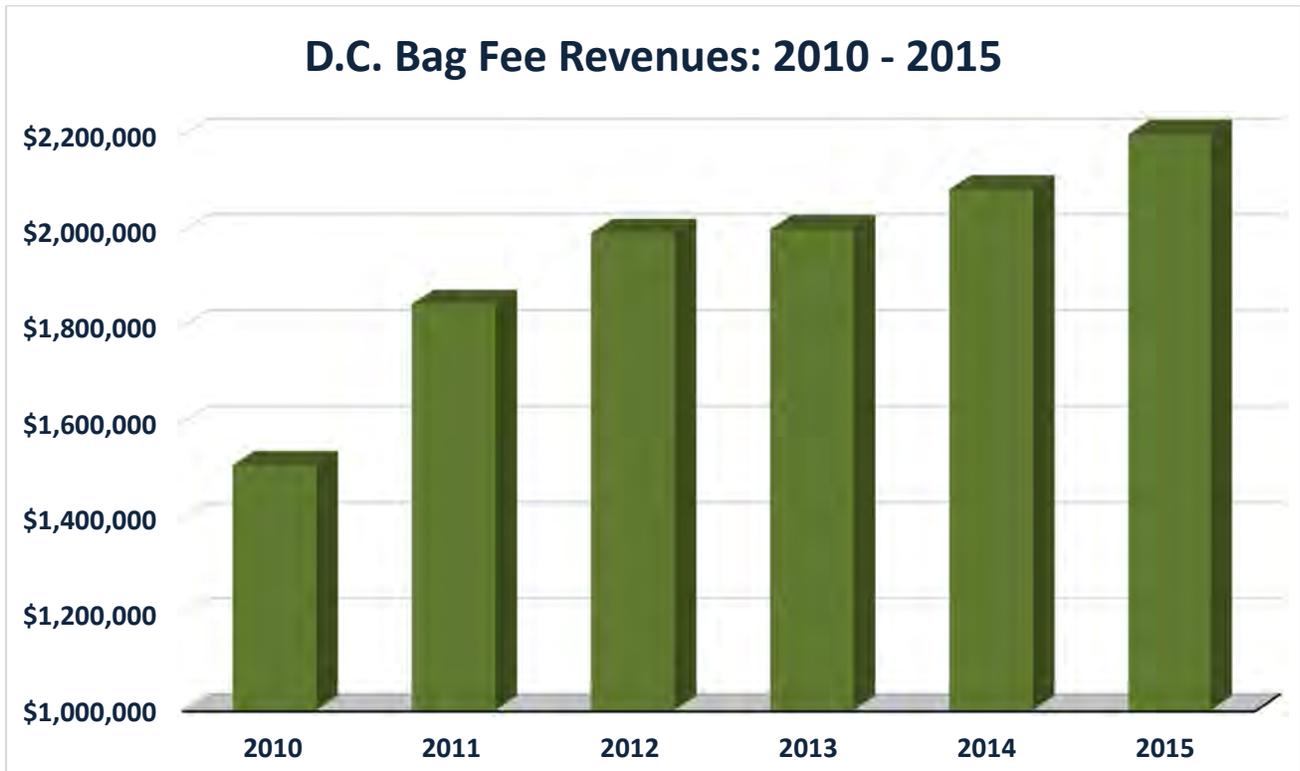


Figure 1 – D.C. Bag Fee Revenues

³⁰ Anacostia River Clean Up and Protection Fund. Fiscal Year 2015 Summary Report. Government of the District of Columbia. Department of Energy and Environment. Tommy Wells, Director. July 7, 2016.

³¹ https://www.washingtonpost.com/local/dc-population-reaches-four-decade-high/2016/12/20/53ea8736-c6fa-11e6-bf4b-2c064d32a4bf_story.html?utm_term=.5229ca855e6b

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Clean Water Action Flyer - Misleading Claims

Clean Water Action Flyer - California Marine Litter Claims

In 2016, Clean Water Action in California distributed a flyer nationwide entitled, "Why Ban Single-Use Plastic Bags in California?" The information in this flyer misleads readers by referencing a number of citations incorrectly, and making claims that the citations, in many cases, do not support. These misleading claims are still being used to justify implementation of plastic retail (PR) bag regulations throughout the country. Examples of these erroneous claims include:

1. Why Ban Single-Use Plastic Bags in California?

Claim: Approximately 8 million metric tons of plastic debris enter the world's oceans each year, but leads the reader to erroneously believe that this figure only represents PR bags.

Assessment: The flyer fails to mention that most of this plastic originates from five Asian countries. In fact, the U.S. is #20 right behind North Korea, as shown in Figure 2 below.

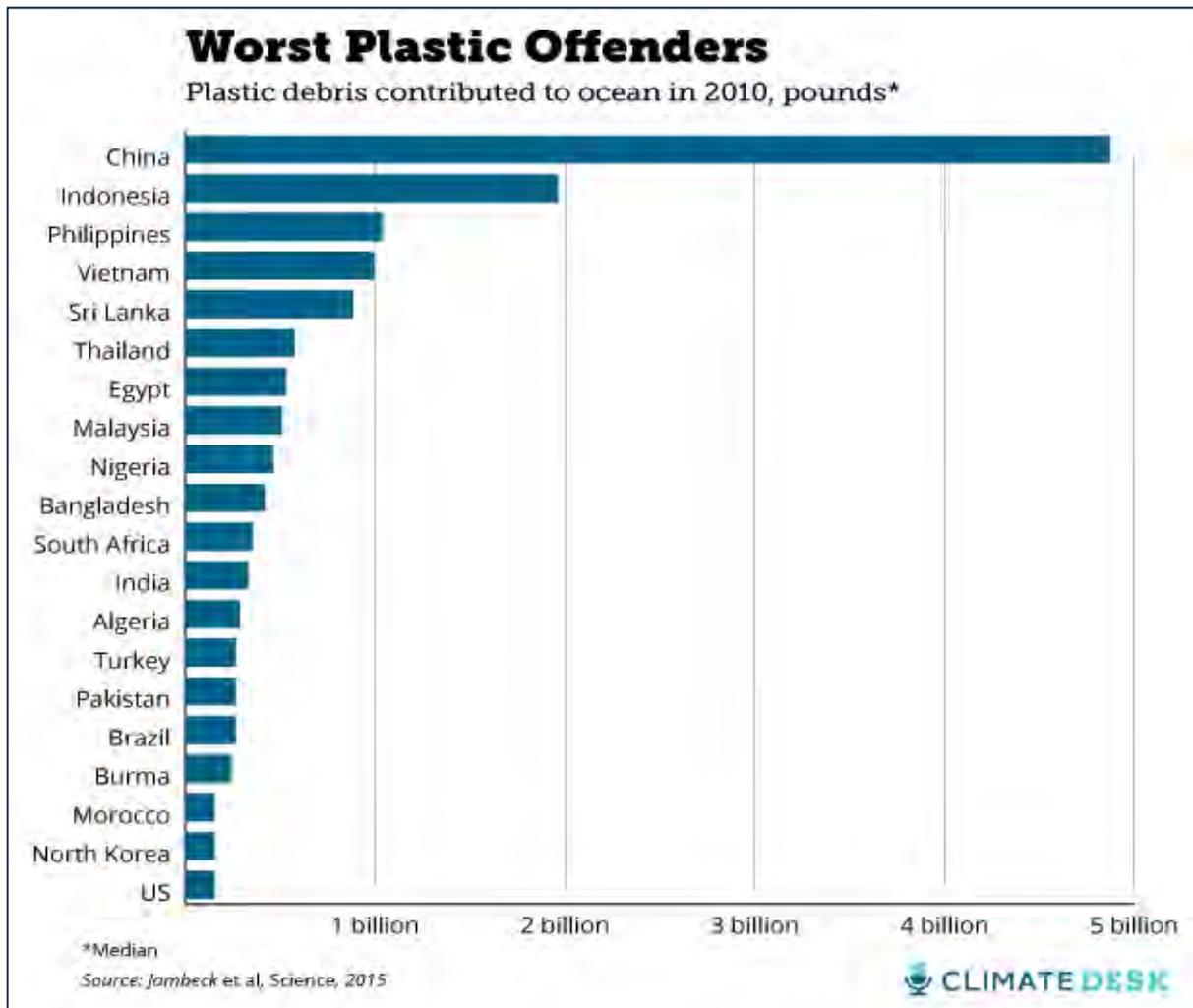


Figure 1 - Worst Plastic Offenders

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2. Plastic bags waste taxpayer dollars.

Claim: A Natural Resources Defense Council (NRDC) report, "Wastes in Our Water," is cited for a claim that between 8 and 25 percent of litter-related costs incurred by California state and local governments is attributable to plastic bag waste.

Assessment: The NRDC report makes no such claim and does not attribute costs to any particular component of litter. The "between 8 and 25 percent" claim is taken from a CalRecycle website¹ and is based on International Coastal Cleanup (ICC) data from San Jose and LA County that are not representative of either county overall, the State of California or the U.S. overall.

Claim: In California, approximately 24 billion bags end up in landfills annually, and managing that costs \$25 million dollars each year.

Assessment: While the CalRecycle website mentions 24 billion bags², it makes no such claim about the costs to manage bag disposal.

3. Bag bans work

Claim: San Jose's bag ban reduced plastic bag litter by 89 percent in the storm drain system, 60 percent in the creeks and rivers and 59 percent in city streets and neighborhoods.³

Assessment: The report cited, for the most part, references the change in bag litter, not overall litter. The one data point that does address overall litter shows a reduction that is due primarily to surveying 107 sites initially, but only 31 sites in the follow-up survey. For plastic bags, only 15 sites were surveyed pre-ordinance and only 10 sites were surveyed post-ordinance. In both cases, the number of sites in the follow-up survey is much lower than in the initial survey. Thus, the data from the two surveys are not comparable and the changes implied may not be representative of San Jose overall.

4. Plastic bags harm marine and human life.

Claim: California's waterways are filling with plastic.

Assessment: The flyer deliberately misleads its readers by using citations that reference plastics in general, not plastic bags. Additionally, many of the plastic bags observed in marine debris have been identified as garbage bags, not PR bags.⁴

5. California's waterways are filling with plastic. Single-use plastic bags are a major part of the problem.

Claim: About 61 percent of street litter in the Bay Area is not captured by street sweeping or litter collection and ends up flowing into local waterways. It then erroneously asserts that single-use plastic bags are a major part of the problem.

Assessment: This claim is based on an inaccurate California Coastal Commission document stating that plastic bags comprise 13.5 percent of shoreline litter. That statement is incorrectly taken and the study actually stated that all types of plastic bags comprised just 6 percent of total litter.⁵ PR bags are just a subset of this category.

¹ Retrieved on March 21, 2017 from: <http://www.calrecycle.ca.gov/publiced/holidays/ReusableBags.htm>

² Ibid.

³ Retrieved on April 24, 2017 from: <https://www.sanjoseca.gov/Archive/ViewFile/Item/2027>

⁴ Technical Assessment of BASMAA 2012 Documents. Environmental Resources Planning. March 2012.

⁵ An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter. Prepared by: California Ocean Protection Council in consultation with California Marine Debris Steering Committee and Gordon Environmental Consulting. November 20, 2008.

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Claim: The City of Los Angeles found that plastic bags made up 25 percent of litter in storm drains.

Assessment: That data originates from 2004⁶ and clearly represented wet weight, not dry weight, since the volume of plastic bags was 19 percent. Given that plastic bags are very thin and light weight, it is highly unlikely that the dry weight percentage would exceed the volume percentage.

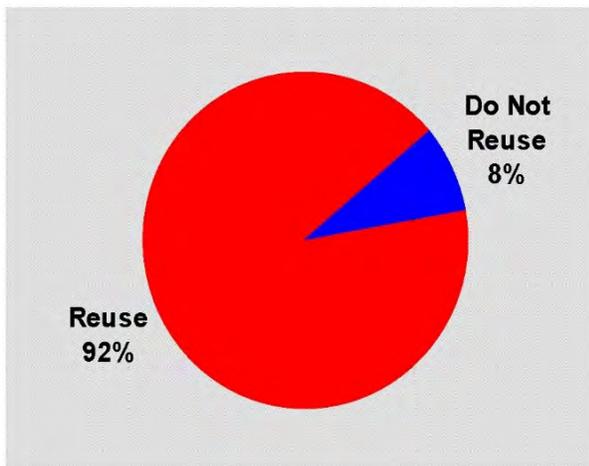
Claim: The average time of use of a disposable bag is 12 minutes.

Assessment: This claim clearly ignores the reality that 92 percent of those surveyed⁷ reuse disposable bags and that 65 percent reuse them to contain trash as shown in Figure 3.

Near Universal Reuse of Plastic Shopping Bags...

- The reuse of plastic shopping bags is nearly universal, with about two thirds (65%) of respondents using them to contain trash +

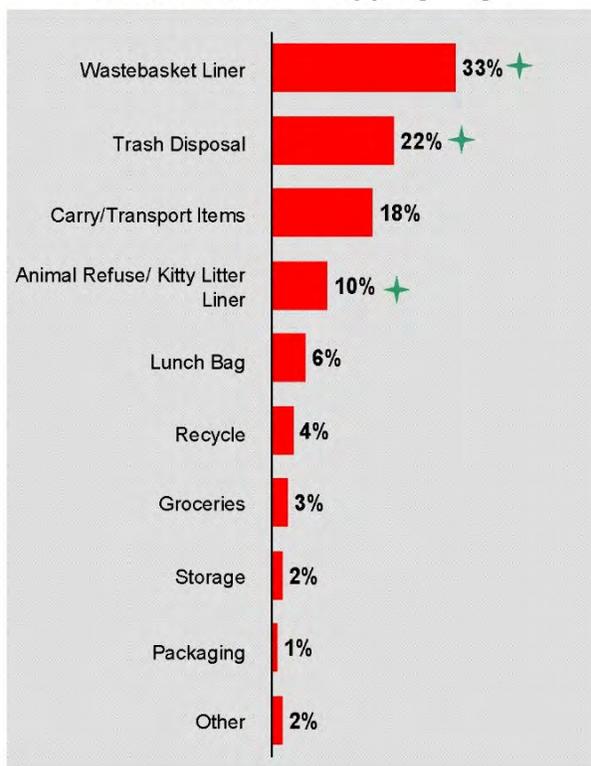
Reuse of Plastic Shopping Bags



Q5. Do you or does anyone in your household ever reuse plastic shopping bags?

Q6. [IF Q5 = YES]: What is the primary purpose you reuse plastic bags for? (n=462)

Uses for Plastic Shopping Bags



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Figure 3 - Near Universal Reuse of Plastic Shopping Bags

⁶ Characterization of Urban Litter. Prepared by the staff of the: Ad Hoc Committee on Los Angeles River and Watershed Protection Division. City of Los Angeles – Bureau of Sanitation – Watershed Protection Division. June 18, 2004.

⁷ National Plastic Shopping Bag Recycling Signage Testing. APCO Insight. March 2007.