

Single-Use Plastic Bag Ban Informational Report

Prepared For:

Town of Narragansett Conservation Commission

Prepared By:

URI NRS 568: Environmental Leadership in Practice

Instructor:

Dr. Brett Still

Students:

Benjamin Bartley¹, Matthew Bernardo¹, Austin Bottomley², Anthony Campbell³, Lily Herberger¹, Jaimie Holmes¹, Carissa Koski¹, Nate Lukas², Alicyn Murphy¹, Samuel Poli¹, Antonius Siregar¹, Jon Vander Werff¹, and Taylor Witkin⁴

1-URI Master of Environmental Science & Management Program, Masters Student

2-URI Natural Resources Science Dept. Senior

3-URI NRS Biological and Environmental Sciences PhD candidate

4-URI Master Arts Marine Affairs Program, Masters Student

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Introduction

The following report was compiled as a class project in the URI Natural Resources Science Department Course: Environmental Leadership in Practice (NRS 568). This project resulted from in-class discussions following attendance at the Narragansett Conservation Commission meeting in March, where the commission began to discuss the idea of a single-use plastic bag ban within the town.

The purpose of this project was for the students to provide background research for the commission, and provide a summary of their findings. The students formed five different research groups focused on various aspects of single-use plastic bag bans, including: (1) plastics in the marine environment, (2) history of bag bans in New England (3) , economics of single-use bag bans, (4) policy considerations , (3) and public outreach. Student research included literature reviews, and a series of informal interviews with community members, and environmental policy groups that have established, or have tried to institute single-use bag bans in their communities.

The class would like to Commission for the opportunity to work collaboratively on this issue, and we look forward to supporting the commission efforts in the process moving forward.

Research Group Focus Areas

Plastics in the Marine Environment – Environment and Human Health (Carissa K., Lily H., Alicyn M., Taylor W.)

Marine pollution is now mostly comprised of plastics directly dumped into the sea or littered near waterways. Cities generally have large amounts of plastic pollution in their waterways simply from the expansive used of plastics in daily life (Derraik 2002). Plastics have been entering the oceans at rates that parallel their increasing production worldwide over recent years. However, sunlight and seawater begin to break them into smaller pieces over time (micro-plastics), resulting in single polymer molecules that are themselves, toxic. At all stages of this process, plastics are in danger of being ingested by marine life (Moore 2008). Ingestion of large pieces of plastic has negative effects on all manner of ocean fauna. The micro-plastics produced by weathering, generally concentrate persistent organic pollutants, which may rise up trophic levels starting with filter-feeders (Andrady 2011).

Though the first proven effects on organisms of plastics in the marine environment were poisoning, choking and entangling of larger animals like sea turtles and birds, plastics in the marine environment can act as a rafts for invading sessile species (Barnes and Milner, 2005; Gregory, 2009). Plastic debris has introduced exotic marine species to the Atlantic and has been found colonized by invasive species elsewhere, demonstrating potential as vectors for non-native species (Barnes and Milner, 2005). Plastics can be colonized by a wide range of species, sometimes very quickly. Their durability allows for more successful rafting than organic debris which will break apart and sink over time and distance (Barnes and Milner, 2005; Gregory, 2009). Dealing with exotic species in the marine environment is not an easy task; they tend to escape detection and those that find a niche become established very quickly. As with all invasives, the extent of the damage they may cause is virtually impossible to predict.

In most developed countries, the average consumption of single-use plastic bags is 300 per person per year (Ayalon 2009). In cradle-to-grave studies of single-use plastic bags and single-use biodegradable bags, the best way to fractionally affect personal contribution was to reuse the bags. Biodegradable bags are not preferable in these studies because they score about the same as the regular single-use plastic bags (Muthu 2011). Better alternatives must be explored. The Rhode Island public has become increasingly aware of the dangers to our unique state posed by climate change directly tied to emissions, mainly sea level rise. Single-use plastic bags are manufactured from crude oil, generally with electricity generated from burning coal. Curbing carbon emissions is the main method of policies and agreements seeking to slow climate change and our rising seas.

While plastic pollution and marine debris are a global problem, we tried to identify two areas in which pollution from plastic shopping bags had the potential to impact Rhode Island's coastal ecosystems: seabirds and estuaries. Despite its small size, the state's varied coastline and multitude of coastal and marine ecosystems makes it a perfect habitat for a variety of seabirds. Several studies have found that plastic debris has a significant impact on seabirds (CBD, 2012; Votier et al., 2011; Wilcox et al. 2015). Entanglement has been found to be a major source of mortality for seabirds such as the northern gannet, which can be found offshore of Rhode Island during the winter. Entanglements, often with seabirds because they use marine debris for nesting material Votier et al. who studied the of the use of plastic debris as nesting material by northern gannets, found that the majority of the entanglements were of nestlings, young birds that had yet to leave the nest. Plastic also threatens seabirds and marine life in other ways, like ingestion. A recent review of literature documented over 600 marine species,

ranging from microorganisms to whales, affected by marine waste, largely through ingestion (CBD 2012, Wilcox et al 2015). Indigestion has many effects in these organisms, from blocking an individual's gut to leaching toxins.

In addition, we investigated the potential impact of plastic pollution on estuaries, an important part of Rhode Island's coastal landscape. While research on the impact of marine debris is somewhat limited, we can hypothesize some potential threats. A study conducted in 2013 in Brazil found that the main impact on estuaries and its biota was from the ingestion of plastic items (Ivar et al., 2013). Rhode Island's growing shellfish aquaculture industry, much of which occurs in its many estuaries and tidal ponds. In recent years the industry has already been threatened by harmful algal blooms, forcing periodic harvest closures. The pervasiveness of marine plastics, which could be ingested by oysters and other shellfish, adds another threat to this important industry. and Plastic bags that remain in estuaries could also leach toxins, which travel up the food chain to humans, the end consumer. A recent study by Sussarellu et al. (2015) published in the proceedings of the national academy of sciences documented reproductive disruption and larval impacts to pacific oysters exposed to microplastics.

As plastics break down in the marine environment they do not decompose, they continue to break down into smaller particles, often referred to as "micro-plastics" that are ingested by marine life. Dangerous compounds such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), dioxins, and DDT bind to the plastic particles making them even more harmful for marine life. Organisms that ingests these plastic particles cannot digest the plastic's chemical compounds resulting in a biomagnification of these toxins, as they are stored in these tissues (Seltenrich, 2015). As a coastal community, this impact is relevant to the health of Narragansett residents who may consume seafood. Additionally, fisheries and aquaculture are of great significance to the economy and culture of the Narragansett community.

History of Single-Use Plastic bag bans in New England (Austin B., Anthony C.)

The first town to ban single-use plastic bags in New England was the town of Westport, CT in 2008. Since that time, there have been efforts to ban bags at the state level in CT and RI, but these efforts have fizzled in committee. However, bag bans have proliferated in RI and MA with the towns of Barrington, Newport, Aquinnah, Barnstable, Bourne, Brookline, Cambridge, Chilmark, Dennis, Duxbury, Edgartown, Falmouth, Harwich,

Ipswich, Manchester, Marblehead, Mashpee, Natick, Newburyport, Plymouth, Provincetown, Salem, Sandwich, Tisbury, Town of Chatham, Truro, Wellfleet, and West Tisbury and those are only the coastal communities (www.baglaws.com, 2017). The success of these local actions have several commonalities including engaging all sides in debate, vocal community support, and concerns from the business community. Those towns where the bag ban has been discussed but not implemented also have commonalities including deference to statewide action and putting business concerns above community input. Previous bag ban processes offer important insight into aspects of the successful processes.

The Barrington bag ban is not only notable as the first in Rhode Island, but also a resounding success. The bag ban was vocally supported during the 2 year assessment hearing, and town council members voted to make the ban permanent (Barrington Conservation Commission, June 10, 2014). The Barrington bag ban set the precedent for similar bag ban's in RI towns, outlining in detail the legal reasoning and jurisdiction to make such regulations (Roberts, 2012).

Bag bans are brought before town councils in a variety of manners by concerned citizens and from working groups or councils. An important component of many of these presentations is business input. In the town of Ipswich only a few business were against a ban, and a large retailer was in favor due to the cost of buying bags (Town of Ipswich, April 4, 2016 Minutes) and in Barrington many business signed a letter of support for the ban (Rumpler, 2012).

An important lesson from previous bag bans are ways the laws have been circumvented. In both Westport, CT and Barrington, RI businesses including CVS and Shaw's provided customers with thicker "reusable bags" (Woog, 2015; Faulkner, 2015). These type of actions circumvented the law and violated the spirit. However, by stipulating a slightly increased minimum thickness of 2.25 mm these thicker plastic bags are included in the bag ban. In Barrington, this loophole was closed with a 3-2 vote with one councilor dissenting due seemingly due to a lack of support for her suggestion to include zip-lock bags (Barrington Town Council Meeting, 2016).

There have been several novel approaches to accommodating business, which helps develop business support. The town of Barrington's had a sunset provision in their law, and assessed the success of the provision after two years. The town of Amherst allowed large retailers a year to develop a plan to accommodate the ban (Hollerbach, 2017). A similar one-year grace period was given for the entirety of Barnstable County's

businesses. The City of Cambridge has the option to apply for an exemption due to a need to use existing bag supplies or undue financial burden (City of Cambridge, 2017). The combination of phasing into effect a ban and allowing for exemptions when necessary are important components of accommodating the business community while working towards a ban.

A statewide ban in Rhode Island has been explored in many forms. A 3 cents incentive for bringing reusable bags was first proposed at the statewide level in 2006 (Akullian et al., 2006). However, after conducting an extensive cost benefit analysis, it was found that the cost of plastic bags on Rhode Island was 11 cents and an 11-cent tax on each bag was recommended (Akullian et al., 2006). In recent legislation, a tax has been replaced in favor of total bans on plastic bags and styrofoam (Faulkner, 2016). The statewide laws have not made much progress due in part to a concerted opposition composed of business groups.

The local bag ban has been discussed in many local communities only to be tabled for a variety of reasons. By exploring these failed processes, we hope to learn from past mistakes to help facilitate the successful implementation of a bag ban. In Jamestown, concerns were twofold; both economic and the idea that a statewide ban would be a better option. This led to a letter lending support to the statewide ban, allowing business to voluntarily stop using bags, and encouraging personal action (Jamestown Town Council Meeting, May 19, 2014). Voluntary business cooperation resulted in no plastic bags at checkout in 20 business, 3 new plastic bag recycling bins, 29 business offering paper bags, and 30 businesses promoting reusable bags (Jamestown Town Council Meeting, April 21, 2014). Over 200 signatures of Jamestown residents were collected supporting the bag ban (Jamestown Town Council Meeting, April 21, 2014). Jamestown took no legislative action due to fears for the business community there seemed to be adequate support in both business and residents to warrant a ban.

The success of local bag bans across Massachusetts illustrates that the local level is an appropriate place to enact this sort of reform. Local actions are often taken into account when considering a statewide ban. This was especially true for California, in which significant local support enabled them to pass their statewide ban. In 2007, San Francisco became the first city to pass the single-use plastic bag ban, and by September 2016, 122 ordinances had been passed banning single-use bags in over 151 counties and local jurisdictions. This led to overwhelming support of the statewide ban (California Proposition 67, Plastic Bag Ban Veto Referendum (2016)).

The commonalities for local bag bans are many from a groundswell of resident and limited opposition from the business communities. When bag bans fail to pass, it is often (due to?) town council members acting as surrogates for the business community, instead of the individual residents (voicing their opinions, or something along those lines). In towns with bag bans such as Barrington, no economic burden has materialized. Instead, banning bags is a small but manageable nuisance for business that has a positive impact on coastal views and ocean health.

Economics of Single-Use Bag Bans (Benjamin B., Matthew B.)

The majority of the research into plastic bag bans has demonstrated that in the many cases the long-term economic impacts of the bans are minimal (AECOM, 2010; Equinox, 2013). However, each time the issue of banning plastic bags is proposed, the potential negative economic impacts are used as a reason to continue using the bags. There even exist coalitions that are specifically dedicated to this opposition. The following sections will describe in detail the true economics impacts of plastic bag bans on retailers, consumers, cities/towns and plastic bag manufacturers.

Economic impact on retailers

Most commonly, retailers provide single-use plastic bags to customers for free. These costs are spread out among the merchandise and thus reflected in the retail prices. When a plastic bag ban goes into effect, most retailers are required to offer paper bags in their place. Paper bags cost 15x more than plastic bags (\$0.01/plastic vs. \$0.15/paper) so retailers could stand to incur greater expenses. However, there are a several ways retailers in other states have offset the cost of providing paper bags, and even profit from it. The first is that they can charge customers a small fee for each paper bag for the first year of the ban, then increase the fee upon the beginning of the second year. For example, for the first year they might charge \$0.10/paper bag, then increase the fee to \$0.25/paper bag the second year. The \$0.05 loss they incur during the first year could not only be made up, but they could actually profit \$0.10 per paper bag after the first year. This 'phased-in fee' was implemented successfully in San Jose, California (Equinox, 2013).

Historically, the main topic of opposition to plastic bag bans is one of economics, where local retailers bear an unfair proportion of the burden when such measures are implemented. Opposition groups claim that buying paper bags is more costly, and customers will decide to shop in neighboring regions where single-use plastic bags are

not banned. However, few studies have been conducted to examine this issue. The most popular study of this kind attempts to correlate plastic bag bans and economic harm to retailers in the form of decreased sales and employment. The study was published in 2012 and conducted by the National Center for Policy Analysis (NCPA), a Texas-based 'Libertarian' think-tank (NCPA, 2012). The particular NCPA study has been repeatedly used by opponents of plastic bag bans to illustrate the economic harm that they bring, but has some fundamental flaws in its approach (Equinox, 2013). The following explanation from the Equinox report explains the study's shortcomings:

“However, limitations in the NCPA’s methodology must be considered when examining its claims. Conclusions of the economic analysis were reportedly based on (1) a sample size of only three percent of impacted retailers, (2) standard deviations of reported sales changes were not included, and (3) no attempt was made to ensure that the changes in sales weren’t due to an external factor. Other plastic bag ban supporters have questioned the methodology used by the NCPA in compiling this study, bringing to light a segment that claims plastic bag bans are bad for the environment, because ‘plastic bags are better for the environment than reusable or paper bags.’ As argued in the environmental analysis section of this report, LCAs, after considering the number of uses of each bag type, demonstrate that reusable bags impact the environment to a lesser degree than single-use plastic bags.”

Feedback from several municipalities in California that have bag bans in place, including larger cities such as San Jose and San Francisco, have reported “no sustained negative impacts on local retailers.” (Equinox, 2013). Banning plastic bags has created new jobs in some cases. Los Angeles County reported that several local reusable bag businesses emerged post-ban to meet the demands of the new market for reusable bags (Equinox, 2013). On a local level, Barrington was the first Rhode Island municipality to implement a plastic bag ban. 18 months after the ban went into effect in Barrington, the 6 largest businesses in town (CVS, Rite-Aid, Shaw’s, Ace Hardware, Talbots, Ann Taylor Loft) as well as 9 smaller businesses, all signed the following the statement (NEEC, 2016):

“Our business has adjusted well to the plastic bag ban and we find that the ban has no lasting effects negative impacts on our ability to serve our customers and on customer satisfaction.”

Economic impact on consumers

Before any plastic bag ban is implemented, consumers are already paying an annual cost for plastic bags. Traditionally, the cost that the retailer incurs by purchasing plastic bags is passed on to the consumer in the price of the goods being sold. A 2005 study by the United Nations determined that this “hidden” cost of plastic bags is between \$10-15 annually (UNEP, 2005). This price is embedded in grocery costs regardless of whether consumers are taking advantage of the free plastic bags or already using reusable bags. Therefore, before any plastic bag ban is implemented, consumers are already paying an annual cost for plastic bags.

In an assessment conducted in San Diego, projections were made to quantify the cost of switching from plastic bags to paper and reusable bags. Based on this particular study, in the first year of a plastic bag ban where there is a fee of \$0.10 per paper bag, an average household can expect an annual increase in grocery expenditures of \$7.68 or roughly \$0.02 per day (Clapp et al., 2009). This calculation only applies to the first year of the ban, when people are still adjusting to the new system. As people become more familiar with it and become accustomed to bringing reusable bags whenever they shop, that annual cost is expected to decrease.

The issue of an unfair impact on low-income households is often sighted as another negative consequence of plastic bag bans. There are a number of ways to offset this aspect and unburden this particular group. Some municipalities have relief measures built into the plastic bag ban ordinances, such as providing free paper or reusable bags to those enrolled in WIC/EBT programs, thus removing the worry of incurring significant costs in bag purchases or fees (Los Angeles County Public Works, 2010). Other communities have organized “bag drives” where citizens and retailers can donate money or reusable bags to be distributed to those lower-income households who need them (Los Angeles CBS, 2013). These bag drives can also be a good opportunity for retailers to advertise, should they choose to have their business logo printed on the reusable bags.

Economic impact on cities/towns

Cities and towns, especially in coastal zones, stand to benefit economically from plastic bag bans. Litter generated from plastic bags entering the environment is costly to clean up and can clog storm drains leading to further costs. A study prepared for the Environmental Protection Agency found that West Coast coastal communities spend approximately \$13 per resident annually for the removal of litter from the environment

(Stickel et al., 2012). With a plastic bag ban in place, it is likely that these cleanup costs would be greatly reduced. Even when single-use plastic bags are disposed of properly, they can take flight and enter the coastal environment with a slight breeze. Once these bags enter the environment, they create unsightly litter that can detract from the natural beauty that attracts tourists to coastal cities and towns. The tourism industry in many coastal towns relies heavily on the health and aesthetic appearance of waterways and ocean access points. Single-use plastic bags tend to float and move with the flow of water through runoff drains and commonly end up at beaches and coastal areas where they create piles of litter.

When considering a plastic bag ban, the City of San Francisco has estimated an annual savings of \$100,000 for avoided plastic bag cleanup costs and a reduction in single-use plastic bag waste processing fees of \$600,000 (City and County of San Francisco, 2011). New York City has estimated a cost savings of \$10 million by eliminating the need to send plastic bags to out-of-state landfills (Rosenthal, 2003). While these cities are extreme examples due to their large area and population, the same savings can be expected at smaller scale cities and towns.

Economic impact on plastic bag manufacturers

It is likely that any considerable economic impacts of plastic bag bans will be realized at the plastic bag manufacturing level. Subsequently plastic bag manufacturers represent the majority of the organized opposition to these bans. The anti-bag ban coalitions include the American Progressive Bag Alliance (APBA), Save the Plastic Bag Coalition, and the American Chemistry Council, whose members include Exxon, Dow and plastic bag manufacturers (Ferris, 2010).

These manufactures have launched aggressive opposition campaigns stating that many jobs will be lost if plastic bags are banned. However, according to former Senator Padilla of California, plastic manufacturers generally produce a diverse array of products and are generally capable of a transition from one product to another (Padilla, 2013). Plastic bag manufacturers could shift from single-use plastic bag production to reusable plastic bag production to attempt to capture any potential loss in revenue from a single-use plastic bag ban.

Conclusion

The economic benefits of plastic bag bans, especially in coastal communities, outweigh any potential negative impacts. There are many factors that influence consumer behavior and quantifying any impacts to consumers, retailers, and manufacturers is inherently difficult. Due to the extreme low cost of single-use plastic bags (\$0.01/bag) vs paper bags (\$0.15/bag), any replacement bag type will likely initially cost more for retailers. Fortunately, studies have shown that soon after plastic bag bans with a fee are enacted, approximately 15% of consumers choose to use paper bags, with the rest choosing reusable or no-bag options (Equinox Center, 2013). Therefore, retailers need to purchase and provide fewer bags to consumers, which reduces their cost of operation. Consumers can also expect a positive economic impact from a plastic bag ban. There are unseen costs from environmental damage and litter cleanup that are passed on to consumers. Once reusable bag bans are adopted, they pay for themselves in a reduction of these litter cleanup costs. Single-use plastic bag litter costs coastal cities and towns thousands of dollars annually to cleanup and causes potential losses in tourism due to unsightly trash on beaches and waterways. Municipalities will benefit economically when residents take a sustainable approach to transporting groceries and goods from store to home. While it is logical that the plastic bag manufacturing industry could be negatively impacted from a single-use plastic bag ban, a lack of research makes it difficult to accurately assess.

Policy Considerations

(Sam P., Antonius S., Jon V.W.)

Below is a select review of plastic bag bans implemented in New England. A brief analysis of the general strengths and recommendations that can be made to all of the ordinances we reviewed will precede a list of recommendations that should assist in developing the Commission's proposed legislation.

Legislation Policy review

Barrington, RI

The Town of Barrington passed Rhode Island's first plastic bag ban in January of 2013. The ordinance was initially constructed to mirror ordinances passed in California municipalities. Since its initial adoption, Barrington has amended its ban on several occasions. First, the council voted to remove the ban's sunset provision in 2014 in response to public support to retain the ban in perpetuity. In 2015, Barrington's town council faced efforts by some businesses to circumnavigate the intent of the ordinance

by offering thicker plastic bags to customers. Bags now must be four mils thick to meet the definition of reusable.

[Link to Barrington legislation:](http://ecode360.com/26767055) <http://ecode360.com/26767055>

Newport, RI

Following in Barrington's footsteps Newport became the second community in Rhode Island to ban single-use plastic bags. The ordinance takes effect as of November 1st, 2017. Accompanying this new legislation is a plan to gradually reduce the distribution of plastic bags. The ideology behind this is the hope that the public will voluntarily reduce their use of the bags by the enforcement date of November 1st. Thereafter the enforcement date, total elimination of single-use plastic bags will be enforced and violations will be issued. The first violation a written warning will be administered and following violations will result in a \$1000 fine. Repeat offenders may have the City Council revoke business licenses.

[Link to Newport Legislation:](https://www.municode.com/library/ri/newport/codes/code_of_ordinances?nodeId=COOR_TIT8HESA_CH8.32HESA_8.32.010LEFIIN)

https://www.municode.com/library/ri/newport/codes/code_of_ordinances?nodeId=COOR_TIT8HESA_CH8.32HESA_8.32.010LEFIIN

Bristol, RI

The Town of Bristol considered adopting a plastic bag ban in February of 2013. The proposed ban met opposition on the basis that a focus on plastic bag recycling should exist as the most prominent feature of the bag legislation. Instead, the majority of council members favored implementing a public information campaign to encourage recycling of paper bags. The proposed alternative of recycling plastic bags was more acceptable to the majority of the council; the campaign's effectiveness in comparison to a plastic bag ban has not been evaluated.

Freeport, ME

The Town of Freeport passed their bag ban in June of 2016. In addition their ban on single-use plastic bags, the town council required that any store must charge a \$0.05 fee for paper bags. Restaurants are not required to charge this fee. The town encouraged the inclusion of this charge as an additional incentive to encouraging the use of reusable bags. Additionally, Freeport's ordinance includes reusable bag definitions that are unique compared to Rhode Island's existing bag bans: this includes defining minimums for weight capacity and lifetime use.

Link to Freeport Legislation: <http://www.baglaws.com/assets/pdf/maine-freeport.pdf>

Strengths of Ordinances

The towns with successful bans had similarities in their legislation. Ordinances were very detailed: they used concise wording that was easy to understand and were not overly long in length. The most crucial sections in many of these ordinances are the definitions; careful effort must be spent to prevent opponents from finding loopholes and making the legislation ineffective.

Not only are the definitions of what constitutes a single-use plastic bag important, but the definitions establish the types of businesses that can and cannot use plastic bags. This may be critical to the success or failure of the ordinance. Giving the public a strong definition of “plastic barrier bags” for the transport of loose produce, meat, and other foods is important to minimize inconvenience for local grocery businesses. Almost all municipalities with bag bans find that these plastics are acceptable to prioritize the safe handling of certain foods.

Other sections that are critical to effective bag legislation are enforcement and penalties. Once the legislation is passed and the new ordinance must be strictly enforced. For first offenders, strict written warnings are a good suggestion, but harsh penalties should follow subsequent offenses. A major focus involves discouraging retailers from using the bag by acting as an incentive to abandon the use of single-use plastic bags.

Recommendations

- The implementation of a comprehensive education, awareness, and outreach program designed to educate the citizens should accompany any plastic bag legislation.
- The inclusion of a sunset provision could exist as a reasonable compromise to those opposed to a complete bag ban.
- The ordinance should clearly define alternatives to plastic bags, such as paper bags or boxes (those that retailers receive goods in from distributors).
- Reusable bags must be defined in a manner that prevents thicker single-use bags from being used (machine washable, weight capacity, sewn handles).
- The legislation should define penalties and processes for appeals.
- Exemptions for nonprofit organizations or religious institutions should be included if reasonably adverse impacts affect their ability to administer aid or relief to their community.

Public Outreach & Education

(Jaimie H., Lily H., Carissa K., Nate L.)

Success of a single-use plastic bag ban relies heavily on the acceptance, and ultimately behavior changes, of Narragansett residents. Generally, the public has a hard time accepting change. New knowledge creates the initial foundation for behavior change. Outreach and education efforts, that disseminate new knowledge to the public, can help mitigate issues that may arise if certain considerations are made. Durability of behavior changes can be strengthened by subsets of the community taking a lead by example approach. By making new, sustainable behaviors the social norm, a plastic bag ban may become a preference, not an inconvenience.

Exploring Outreach Options

Changing behaviors regarding the use of plastic bags may simply start at the store level, and stem down. A Japanese study found that simply prompting the consumer whether or not they need a bag during check-out (and waiting to bag the items) can significantly lower the percentage of those who take a single-use bag (Ohtomo et al., 2014). This idea of a voice prompt may be useful in considering a Narragansett bag ban, and can help to raise awareness of individual's usage habits with plastic bags (hopefully rippling through the community). In order to make these changes however, significant public awareness and education initiatives are needed in order to increase public awareness and support. For Narragansett, this could be information/presentations at a farmers market, town meetings, or school programs. This would not only educate the public about the situation, but also create a sense of collective commitment within the community.

This idea of collective commitment could be in the form of a community pledge. By allowing portions of the community to pledge to be "plastic bag-free", they are forced to make a behavior change in order to comply with the pledge. It is also much more maintainable, since an individual is more likely to participate in a behavior with others doing it around them, as well. Upon completion of the pledge, they could win a prize of some sort (perhaps in partnership with local businesses), which could help to garner interest in the pledge from the beginning. Yet by committing to the behavior, they are likely to continue in the future on their own (if they commit for two months to use only reusable bags, for example) (DeYoung 1993).

This example illustrates that plastic bag use may be tied to norms, not a matter of convenience. The ability to make the change is very available thanks to reusable bags being available at many local businesses. Starting small and working up is the only way to make lasting change, as consumption is intertwined with societal norms.

Recommendations

- **The desired behavior change must be realistic.** - As the issue at hand increases in complexity, the period for implementation must also increase. The period for a transition away from single-use plastic bags may take several years. Making successive small changes is an important aspect of changing behaviors.
- **Outreach must be targeted towards a specific audience.** - There is no one-size fits all option to public outreach when the intended target audience is all Narragansett residents. Successful behavior change becomes more likely if specific knowledge and resources relevant to a target audience (consumers, business owners, tourists, etc.) are identified and disseminated to that audience.
- **A higher and continued level of outreach will generate a better response.** - A series of outreach efforts drawn out over a longer period is more likely to aid in behavior change for residents. This will prolong the involvement of stakeholders, as an initial set of outreach efforts may not be enough but a series of outreach efforts spread out over the course of one year may have a better impact.
- **The chosen outreach techniques are reliable.** - Different types of outreach have varying levels of effectiveness depending on their desired message and target audience. Intercept campaigns, providing information at venues the target audience is already present such as farmers' markets and community events are a proven method of delivering information to a general public audience.

Community Interviews

Outreach- Nonprofit organizations

Save the Bay, Dave Prescott

Clean Ocean Access, Dave McLaughlin

Surfrider Foundation, Melissa Gates

Clean Water Action, John Berard

Question 1:

What do you think the most effective form of the bag ban is? (complete ban, bag tax, fee for paper, etc)

Responses to Question 1:

Save the Bay: There are different answers for different communities, but a complete ban is likely the best option, and could lead to a statewide ban if multiple communities also ban the bag. Be wary of representatives from the plastic industry trying to fight the ban, as this has happened before in local communities. This also depends on how often you shop (such as an example in Ireland where individuals may shop every day or every other day, rather than once every other week, meaning they use less bags at once per trip).

Clean Ocean Access: Complete ban on plastic bags is best, with an emphasis on reusables, rather than just switching to paper. Newport and Barrington do not have a fee schedule for paper bags.

Surfrider Foundation: The best type of legislation categorically includes ALL three of these:

- (1) ban on single-use plastic bags (removes thin film bags from the environment, period.);
- (2) ban or mandatory, uniform fee on single-use paper bags (rather than simply shifting the pollution problem from plastic to paper, this incentivizes the use of reusable bags and by assessing a UNIFORM fee, levels the playing field for small and large businesses, who are all required to charge the same fee);
- (3) mandatory, minimum fee on all reusable bags (this closes the loophole that enables plastic bag manufacturers and retailers from contravening the intents of enacted legislation to ban thin film bags, whereas thicker plastic bags are being distributed for free, we're seeing them in the waste stream, indicating that they are not in fact being re-used, but rather tossed out or being recycled. A mandatory, minimum fee would incentivize the use of reusable bags by not giving them out for free).

And, this is optional, but good: a definition of "reusable bag" that requires it to be machine washable, therefore adding another measure to close the loophole that allows thicker plastic bags to be used in a single-use manner.

Clean Water Action: The most effective bag bill is to ban the use of plastic bags and put a fee - 10-15 cents - on paper bags. There are several reasons for this, but the biggest one is that a straight ban on plastic incentivizes the wrong consumer behavior. We want people to switch to using *reusable* bags over *disposable* bags, not to paper bags over plastic. I have attached my written testimony for a statewide bag ban that was introduced in the general assembly earlier this year to this message. It explains some of the reasons that a plastic-only ban is not really the best policy solution for attacking the problems plastic bags create.

Question 2:

What do you see as the biggest challenges when it comes to public acceptance of the bag ban?

Responses to Question 2:

Save the Bay: People don't like change, even if they understand all of the environmental impacts of using plastic bags. A firm example must be set in order for people to follow, but they will try to resist in the beginning. Any kind of press, such as an op-ed or letter to the editor is a great way to create press around the subject.

Clean Ocean Access: The biggest challenge is not what you would think. The biggest complaint was that this violates their freedom of choice as a consumer and as an American. Dave actually offered to help the opposition to organize their resistance to the bag ban. It is important to give everyone a voice in the process, even the opposition. This builds trust in the community.

Surfrider Foundation: Change is hard, but it's the only constant in the Universe. But people tend to fight change, particularly when it inconveniences them. That's why non-binding resolutions for bags do not work to effect the change we need to see, as they are voluntary. We really need legislation passed, with effective compliance monitoring mechanisms, to encourage the consumer paradigm shift away from single-use items and into reuse, which we know is necessary to adequately protect & sustain the ocean, waves and beaches.

Clean Water Action: I'll list some of the challenges we hear and then the rebuttals to those challenges. In reality, the biggest challenge is breaking the habit of relying on the convenience of plastic bags as a whole (sounds way easier than it is).

Bag fees are burdensome to low income people and those on fixed incomes. They are. That's why fees on paper bags are important. Any revenues raised from the fees on paper bags should go into a dedicated fund that can ONLY be used to purchase and distribute free reusable bags to those that need them.

I reuse my bags for dog poop and bathroom wastebaskets. Dog waste bags are part of the cost of owning a pet - pet owners buy food, collars, leashes, toys, etc., so why should stores subsidize in part your pet ownership? The same thing goes for wastebaskets - it's part of the cost of having a trash can in the bathroom (or just don't use a bag because they are normally not necessary)

Plastic bags are recyclable. Technically true, but only the pristine white or clear bags, and even then, the cost for virgin materials is so low that they are virtually worthless on the resale market. Any other color bag (brown, green, blue, etc.) is already made of recycled plastic, which degrades over time and are ACTUALLY worthless. They also cannot go into curbside recycling bins. When this happens, there are two possible outcomes: 1) they contaminate recycling loads so the entire truck of recyclable material gets landfilled instead, or 2) they make it into the recycling facility and jam up the machine gears when they get caught.

Reusable bags are dirty and can harbor bacteria. They are almost all washable. Those that are not can be sprayed with antibacterial spray and left to dry.

Bag fees, when they are included in policies, are just another way for raising revenues (e.g. they are a tax, and regressive at that). Any fees collected by governments through a fee structure should ONLY go into a protected fund for reusable bag distribution, litter cleanups, and other related community programs. In a perfect world, the law would generate ZERO revenue because that means that everyone is using reusable bags.

Question 3:

What are some outreach and education strategies that you have found to be effective?

Responses to question 3:

Save the Bay: Reach out to the biggest markets in the community, and make them aware that the option is being explored and be sure to give them a voice from the very start. Also, give the public all of the tools to educate themselves about the issue, and allow them to comment before and during the process.

Clean Ocean Access: The best approach to take is data and fact driven science rather than passion. This helps to build credibility and trust. COA relied on social media and other forms of electronic communication for their campaign. It is important to build a presence in the community in both groups for and against the ban.

Surfrider Foundation: Outreach to gain support of legislation:

- Coalition building (folks with the same goal, including individuals, business owners, academics, nonprofits, etc)
- Film nights w/panel discussions (films like Plastic ocean, etc, followed by a panel of experts that the audience can ask questions of) Demonstrating the real threats and issues we face w/single-use items, and how regulation that affects a change of behavior is the best solution
- Outreach after legislation is passed: Signage is useful to assist with compliance by communicating requirements
- Free reusable bag giveaways are costly but effective.

Clean Water Action: Lots of outreach needs to be done prior to the implementation of any sort of bag bill. Again, this is a behavior change issue. Business do things a certain way because that's how they've *always* done things. These bills shake up their model. As I mention in my testimony, straight bans engender opposition from businesses because of the added cost and storage space required for paper bags. When a fee on paper is included, businesses should be able to keep the cost of each bag plus a small incentive (~\$0.08). Businesses also need to be included in the policy construction process. They are important stakeholders and their voices and concerns need to be heard.

Question 4.

How can we work with businesses to keep the inconvenience minimal?

Responses to Question 4:

Save the Bay: Direct outreach is very important, as it allows them to have a say from the very start. Be sure to explain to them financial implications of the ban, and be prepared to answer any and all what-if questions they may have relating to the ban→ make sure they know you care about their interests, not just your own.

Clean Ocean Access: It is the job of businesses to constantly reinvent and reimagine. COA is open to working with any group or business that asks for their help. They are committed to making it easier for businesses to transition.

Surfrider Foundation: Ensure a mandatory, uniform fee on paper; state legislation is a far better deal for businesses than local regulations, as it sets a standard business practice for all to follow, which makes compliance easier (particularly for businesses who work in multiple towns, as well as for distributors and shoppers, etc).

Clean Water Action: That's a tough question, but short of policy prescriptions (which are the best way to incentivize source reduction strategies), I believe one of the best alternative tactics is to engage businesses that provide bags and other single-use items to consumers and get them to change their model. Even the act of asking a customer if they want a bag rather than assuming they do could drastically reduce the amount of plastic bags that end up getting distributed. On the consumer side, [social marketing strategies](#) have proven to be pretty effective, too.

Town of Barrington

Joseph W. Roberts PhD - Author of Plastic Bag Reduction Initiative
Barrington Conservation Commission (See appendix B)

(401) 254-3784
jroberts@rwu.edu

Question 1:

Did you have a prior motivation that lead you to write the original Barrington Initiative?

Response to Question 1:

Dr. Roberts was on the Barrington Conservation Commission for about 18 months before writing the white paper. The commission usually focused on small tasks such as buffers for wetlands. He wanted to make a bigger difference in the Ocean State so after hearing about what happened in Westport, CT, he decided to attempt the same thing in Barrington.

Question 2:

During the Process of making the plastic bag ban permanent, was there a lot of opposition from anyone in the process? (Original Paper, 1-year review, and amended ordinance)

Response to Question 2:

There was some opposition, some believed that this was Government overreach and was unnecessary. They felt this would be unsuccessful and would just lead people to conduct their purchases in other towns bordering Barrington. Even a few Professional Lobbyists came from Washington to oppose the Ban. After a - year review, we saw overwhelmingly positive results and it was clear that the ban was here to stay.

Question 3:

Can you think of any reasons why plastic bag bans might have been unsuccessful in other RI towns such as Bristol or Jamestown?

Response to Question 3:

Dr. Roberts was actually contacted by Bristol when they were attempting to implement the plastic bag ban. Bristol as a whole tried to ride the wave from Barrington, which was not enough to get overwhelming support. The Ban needed to be publicized to the local community much more than it was. Bristol is also a much bigger and commercially active town than Barrington. Therefore, a greater number of chain stores would be in opposition of this Ban with a clear focus strictly on profits, not the local community. In order to get a similar Ban passed, we need to have everyone on the same page with benefits of it. For example, when Barrington was passing the Ban, Shaw's (A chain Grocery Store) was immediately on board and implemented the ban before it was even passed by the town. Support like this goes a long way in a community.

Question 4:

Do you see the possibility for a Statewide Ban within a few years? What steps would we have to take in order to get to this point?

Response to Question 4:

Yes, he feels that a Statewide Ban is possible, but there will be many hurdles along the way. In order to get a Statewide Ban, we need a lot more towns to implement plastic bag bans. The problem with this Ban is that RI tends to have more pressing issues, so in order to get this passed there would have to be almost zero opposition, otherwise it will once again be thrown to the side while they deal with things that are more important. This brings us back to publicizing the attempted ban. The more people see advocacy for the cause, the more likely that they will be in support of it. He even sees the Ban as a possibility for all of New England within the years to come (New Hampshire being the only one to hold out "Live Free or Die").

Question 5:

Do you have any other advice to give Narragansett as they attempt to promote a plastic bag ban in their town?

Response to Question 5:

The overall message throughout this interview seemed to be that we need the public to care. If the “general public” is willing to take initiative on this issue they will not have trouble passing it, but a lack of concern will allow town council to brush it aside. Community members should be helping with the ordinance and showing up to council meetings. If we see 60 people coming out and supporting the Ban then it is going to be hard for someone to oppose it. We also need to reach out to different organizations (Ex. Save the Bay, Environment RI, Surfriders, Audubon Society, etc...) and see if they would be willing to show support for this ban. Finding small businesses in the community that are in support also says a lot. If they are more worried about the environment than a small profit then we should be as well. Chain Businesses tend to have less concern for local community issues.

When writing the white paper for the ban, Dr. Roberts talked about his focuses that were what needs to be done, why it needs to be done, where it will be done, and justification for each of these tasks at hand. A lot of the language he used was based on the California ordinances that put Plastic Bag Bans in place. There is no need to write a paper from scratch. The concerns of different towns are going to be very similar to those in Narragansett so we should be using very similar language to get our Ban passed. This Ban is nothing without ammunition to back it up; the bag ban in Barrington passed because of the local community’s support. If Narragansett can find this same support then we will find that their chances of succeeding are much higher.

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Appendix A

Draft Public Outreach Factsheet prepared by Students

Appendix B

Plastic Bag Reduction Initiative Report, Provided to the Barrington Conservation Commission
Authored by: Dr. Joseph Roberts (2012)

Appendix C

Written Testimony in support of Bill H-5538 from Johnathan Berard, Rhode Island State
Director of Clean Water Action