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June 27, 2011

Chairwoman Anne M. Gobi
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 473F, Boston, MA 02133

Chairman Marc R. Pacheco
Joint Committee on Environment, Natural Resources and Agriculture
State House, Room 312-B, Boston, MA 02133

Re: Sierra Club Testimony in support of S.353, H.1990, H.1159
Related to Plastic Checkout Bags

Dear Chairwoman Gobi, Chairman Pacheco, and Members of the Committee,

Thank you for providing this opportunity to offer our comments on bill S.353, H.1990, H.1159, related to reducing the use of plastic checkout bags in Massachusetts. We wish to express our strong support in favor of this legislation.

The Sierra Club is the oldest and largest non-profit, non-partisan organization environmental organization in the country. With over a forty year history in this chapter, the Massachusetts Sierra Club represents about 22,000 members throughout the state and nearly one million nationwide. We fight for clean air, clean water, the preservation of the Commonwealth's most precious natural spaces, and healthy, vibrant communities.

This bill would ban non-biodegradable plastic shopping bags in retail stores over 4000 square feet. It would not limit other types of bags, such as those used in a market's vegetable aisle.

Plastic bags are convenient and cheap, so it makes sense that retailers provide them for their customers. However, plastic bags cost society a lot more than the price retailers are currently paying to provide them. There is no need for this environmental expense. Simple alternatives such as reusable shopping bags and biodegradable single use shopping bags are available and already used in many stores throughout Massachusetts.

The use of single use plastic bags should be limited because:

- **Plastic bags choke, strangle, and entangle turtles, whales, seals, birds, and fish, many of whom mistaken plastic bags as food**¹² (see images below). Many of these animals are already threatened due to issues such as over fishing or habitat loss. This is a local issue. The list of animals threatened by plastic bags includes green turtles that nest on Nantucket and the right whales that feed off the Massachusetts coast line.
- Among the greatest threats that bags pose is to wildlife. Plastic bags are carried by the wind into forests, ponds, rivers, and lakes. The bags are often mistaken as food by marine mammals. According to a United Nations study approximately 1 billion seabirds and mammals die per year by ingesting plastic bags³. These animals suffer a painful death, the plastic wraps around their intestines or they choke to death.

- **Plastic bags take between 100-300 years to degrade.** Every time we use a plastic bag, we're leaving behind a small legacy of waste for future generations. Even if we stop producing plastic bags tomorrow, we will still be faced with billions of additional animal deaths.
- Production of **1 pound of plastic for shopping bags produces approximately 6 pounds of the green house gas CO₂.**⁴
- The manufacturing of **plastic bags contributes to acid rain and smog**⁵.
- It is estimated that each year approximately **12 million barrels of oil go into manufacturing plastic bags** in the US alone.
- They rarely recycled – **only 5.2% of our plastic bags are recycled.**⁶
- Plastic bags can **facilitate the spread of mosquito born pathogens such as the West Nile virus**, as plastic litter collects rainwater or can block gutters and drains, creating stagnant pools of water that are perfect breeding grounds for mosquitoes⁷.

For all of the above reasons, single-use plastic bag use needs to be heavily reduced. Because plastic bags are inexpensive and convenient, legislation will be necessary in order to change the behavior of consumers and the retail industry. Voluntary efforts thus far have come up short.

VOLUNTARY AGREEMENTS HAVE FAILED

As a response to this worldwide outcry, under public pressure against plastic bags, On March 12, 2009, the Mass Food Association entered a voluntary agreement with the Mass DEP that major supermarkets would decrease plastic bag use by 33% by the year 2013. A 33% reduction, if it actually took place, would place us at the absolute worst performers of all places that have enacted ANY regulation concerning plastic bags – even below Botswana and Burma. However, the Sierra Club has received countless reports of absolutely no change in behavior at any supermarket, and no evidence nor independent body has verified that there has been any change in bag use. Additionally, the performance data is gathered by the supermarkets lobby firm and is not audited.

Photographs of checkout stations at Star Market, Stop and Shop, and Home Depot clearly show that only plastic bags are available – no paper. Observers have noted that supermarket cashiers still regularly double bag groceries; and place bulky items with handles, such as boxes of detergent, in plastic bags. There has clearly been no training to help achieve this goal.

Even if we were to achieve a 33% reduction in plastic checkout bag use, that would conversely mean that we would be maintaining 67% production. The very reason to decrease plastic bag use is that when these enter the environment, and they do, they wreak havoc on wildlife. With the UN's estimate of 1 billion animal deaths per year due to plastic bags, are we saying that killing 667 million is our goal?

Around the world, when plastic bags bans are implemented, the next day, nothing bad happens. People still shop for groceries. Some of them bring reusable bags, some buy cloth bags, some use paper. People don't buy less or more.

BIOPLASTICS

One of the more interesting bags that's been introduced to the market is a bioplastic bag that's biodegradable, compostable, and meets the tough environmental testing standards called ASTM6400. There are to date a handful of manufacturers of this type of plastic, one of them right here in Massachusetts. Metabolix – though their Telles division – is based in Lowell and Cambridge. They make a product called Mirel, which is an example of what can be done to meet the demand for a carry out bag without having the destructive environmental impact that HDPE does. This bill not only allows ASTM6400 bioplastic bags, it also allows the Secretary of the Environment to allow additional types of bioplastics as they are developed.

BAGS ARE BEING BANNED WORLDWIDE

Legislation is a realistic solution. Plastic bag bans or surcharges have already been put in place in countries, provinces and cities all over the world, including:

China, Canada, Israel, Belgium, Italy, Ireland, Hong Kong, Taiwan, Singapore, Botswana, Kenya, Tanzania, South Africa, Thailand, several states in India, three states and territories of Australia, Paris, Mexico City, San Francisco, Oakland, Washington DC, 30 rural villages in Alaska, Westport CT, Edmond WA, Rajasthan (India), Sikkim (India), Taiwan, Singapore, Bangladesh⁸, Malawi, Germany, Sweden, the cities of Paris, San Francisco, Oakland, Washington DC, 30 rural villages in Alaska, Brownsville TX, Mexico City, North Carolina's Outer banks Region, and for the past 20 years, Nantucket Island⁹.


PLASTIC BAG FACTS

- High density polyethylene bags are made with petroleum. The 90 billion plastic shopping bags each year use in the United States¹⁰ which are made from an estimated 387 million gallons of oil and cost retailers an estimated \$4 billion.
- Only 5.2 percent of the plastic bags and sacks in the municipal waste stream were recycled in 2005.
- Production of 1 pound of plastic for shopping bags produces approximately 6 pounds of the global warming greenhouse gas carbon dioxide¹¹. Thus considering that an average shopping bag weighs 1.15 ounces, the manufacture of every 2.3 plastic shopping bags produces 1 pound of carbon dioxide
- Plastic bags are not biodegradable¹² and although they do degrade through mechanical action¹³ and photodegradation in the presence of light, these processes are slow taking an estimated 400 to 1000 years to occur.
- Small plastic bags made up about 9% of the debris found along various U.S. coasts in a five-year study.¹⁴
- Plastic bags do not biodegrade, they *photodegrade*, which means they slowly break down into smaller and smaller bits that can contaminate soil and waterways. This process can take 100-1000 years. As the polyethylene breaks down, toxic substances leach into the soil and enter the food chain.
- Plastic bags are carried by the wind into forests, ponds, rivers, and lakes. The bags are often mistaken as food by marine mammals. Approximately 1 billion seabirds and mammals die per year by ingesting plastic bags¹⁵. These animals suffer a painful death, the plastic wraps around their intestines or they choke to death.
- At least 267 different species are known to have suffered from entanglement or ingestion of marine debris including seabirds, turtles, seals, sea lions, whales and fish.¹⁶
- Alternatives to plastic bags include reusable cloth bags, paper bags, and bioplastics. Many stores are now selling reusable cloth bags for 50 cents to \$1. Some are offering affinity discounts by placing barcodes on the bags that result in a 10¢ discount.
- This legislation will not affect small businesses (defined as any retail store with less than 4000 square feet of space).

In conclusion, single use plastic bags are contributing to serious issues facing Massachusetts, United States and the World: energy, public health, global warming and species conservation. Tackling these issues will require the culmination of many small actions bring about large change. Banning plastic bags is an important and easily implemented step towards meaningful change.

The Sierra Club has long been committed to minimizing the negative environmental impact of human activity and because this legislation would significantly reduce such impact from plastic bags we hope this committee will report these bills favorably.

Respectfully,

A handwritten signature in black ink that reads "James McCaffrey". The signature is written in a cursive style and is underlined with a long horizontal stroke.

James McCaffrey
Director
Massachusetts Sierra Club

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- ¹ Lazar, B. and Gracan, R. "Ingestion of marine debris by loggerhead sea turtles, *Caretta caretta*, in the Adriatic Sea." 2011. *Marine Pollution Bulletin* 62: 43-47.
- ² United Nations Environmental Programme. "Marine Litter-Trash that kills". Report. Accessed June 17, 2011. <http://www.unep.org/regionalseas/marinelitter/publications/default.asp>
- ³ United Nations Development Program (UNDP), Report (web)
- ⁴ Juerg Rohrer, "Time for Change" Website. Accessed May 10, 2011. <http://timeforchange.org/plastic-bags-and-plastic-bottles-CO2-emissions>
- ⁵ Institute for Lifecycle Environmental Assessment. 1990. "Paper vs. Plastic Bags."
- ⁶ US Environmental Protection Agency (EPA), Report (web) Wastes, Non-Hazardous Waste, Municipal Solid Waste. November, 2008.
- ⁷ Environmental Literacy Council. 2005. "Paper or Plastic?" Website. Accessed June 14, 2011. <http://www.enviroliteracy.org/article.php/1268.html>
- ⁸ More Cities and Stores Banning Plastic Bags, Planetsave. Feb. 16, 2008.
- ⁹ Janel Sterbentz. "More Cities and Stores Banning Plastic Bags". Website. Accessed June 14, 2011. <http://planetsave.com/2008/02/16/more-cities-and-stores-banning-plastic-bags/>.
- ¹⁰ ReusableBags.com (<http://www.reusablebags.com/facts.php>).
- ¹¹ Rohrer, Juerg, Time for Change (<http://timeforchange.org/plastic-bags-and-plastic-bottles-CO2-emissions>).
- ¹² Algalita Marine Research Foundation, *Research-Pelagic Plastic-Gyre Voyage 2002*, July 26, 2002 (http://www.algalita.org/research_ffs.html).
- ¹³ Crump, Andrea, Marine Conservation Society, *Long Term Impacts of Plastic Bags in the Marine Environment* ([http://www.mcsuk.org/downloads/policy/coastal_polln/MCS_Long_Term_Impacts_of_Plastic_Bags_In_the_Marine_Environment_\(Aug_2004\).doc](http://www.mcsuk.org/downloads/policy/coastal_polln/MCS_Long_Term_Impacts_of_Plastic_Bags_In_the_Marine_Environment_(Aug_2004).doc)).
- ¹⁴ Five Year Study into Ocean Debris, National Marine Debris Monitoring Program, The Center for Marine Conservation, Washington D.C. November 2007
- ¹⁵ United Nations Development Program (UNDP), Report (web)
- ¹⁶ Plastic Debris in the World's Oceans, Greenpeace Report, August 2009