

Styrophobia.com
a natural way to go...

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March 27, 2008

Testimony before the:
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION
Thursday, 3-27-08, at 9:30 in room 312

Aloha Chair Morita, Vice-Chair Carroll and Members of the Committee:

Subject: SUPPORT OF HCR 191, RELATING TO REQUESTING COUNTIES TO DEVELOP AND IMPLEMENT PROGRAMS TO ENCOURAGE RETAILERS TO INCREASE THE USE OF ENVIROMENTALLY PREFERABLE ALTERNATIVE TO NON-BIODEGRADABLE PLASTIC BAGS

Strong Hawaii winds blow plastic bags across the parks and into the ocean, like toxic tumbleweeds. These bags end up often times in the ocean, harming marine life, including fish, turtles, and seabirds – either by choking, or by the plastic remains blocking digestion.

This resolution recognizes the critical issues at stake for our environment, and encourages Counties to examine the issue and to take responsible action.

There are better alternatives than ever, including inexpensive reusable bags and disposable biodegradable bags. The cost of reusable bags is as low as 99 cents at Safeway, and the cost is lower over the months they are used and reused. The consumer cost is even further lowered, considering the State, City and County workers tasked with collecting and disposing of the bags that don't make it to the ocean.

These plastics end up in landfills across the state, taking hundreds of years to degrade into toxic leachate, which is then pumped through out wastewater plants, into the ocean. What is the cost of shipping our trash to the mainland? Over 50% of our trash can be composted – biodegradable bags encourage this economically and environmentally friendly diversion.

Plastic bags are the #1 enemy of commercial composting facilities. They contaminate the compost, get wrapped in the splines of processing equipment, and reduce the value of the compost product. Biodegradable bags on the other hand, compost almost immediately and do not require separation.

Plastic bags notoriously litter our streets, parks, and are eyesores for our residents and tourists. Tourists remember the trash and it has a negative impact on our repeat visitors and economy. Tourists come to Hawaii to see nature, not plastic bags.

Styrophobia has done a lot of research on the cost, availability and practical distribution of biodegradable replacements for plastic bags. These bags are widely available and the cost will significantly drop as demand and volume shipping costs drop. Presently, we can offer a BioBag for around 13 cents, whereas a plastic bag costs around 5 cents. As petroleum prices rise, and biodegradable demand increases, we can close the gap.

In addition, the plant-based resins that are used to make biodegradable bags can and are being introduced to existing petroleum-based bag manufacturers. This would significantly reduce the local price of these bags and promote local manufacturing.

Somehow our species survived before these bags came around. Let's stop this toxic cycle and offer a healthy, sustainable alternative. San Francisco has shown us it can be done – overcoming the misinformation lobbies - Hawaii can do it too – we are an island dependant on a healthy and clean landscape. Please pass this important bill though.

Mahalo for caring,

Mike Elhoff
Styrophobia LLC

Janice Lehner

From: scott saville [scottsaville@yahoo.com]
Sent: Wednesday, March 26, 2008 2:47 PM
To: EEPtestimony
Subject: I SUPPORT THE PLASTIC BAG BILL HCR 191/HR 160

PLEASE FIGHT FOR THIS.

THANK YOU

SCOTT

Never miss a thing. [Make Yahoo your homepage.](#)

Janice Lehner

From: Windward Ahupua`a Alliance [info@waa-hawaii.org]
Sent: Wednesday, March 26, 2008 6:49 PM
To: EEPtestimony
Subject: HCR 191/HR 160 - Thursday, March 27

SUBMITTED BY:

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Kane`ohe, HI 96744
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COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

Rep. Hermina Morita, Chair
Rep. Mele Carroll, Vice Chair

PUBLIC HEARING
9:30 am
Thursday, March 27, 2008
Conference Room 312

**HCR 191/HR 160: REQUESTING COUNTIES TO DEVELOP AND IMPLEMENT
PROGRAMS TO ENCOURAGE RETAILERS TO INCREASE THE USE OF
ENVIRONMENTALLY PREFERABLE ALTERNATIVES TO NON-BIODEGRADABLE
PLASTIC BAGS**

SUPPORT

My name is Shannon Wood, *Interim President* of the *Windward Ahupua`a Alliance*, a **501c3** Hawai`i non-profit corporation, which was established in July, 2002. One of *WAA's* organizational foci includes waste-to-energy, the **Four Rs**, landfills, shipping trash, and other related solid waste management issues.

Although a resolution such as this is probably the best that we can expect for now, *WAA* strongly supports legislation which requires retailers to do away with petroleum-based plastic bags because it will help reduce the impacts of jamming the landfills with one type of solid waste which will take decades, if not centuries, to decompose.

Burning plastic in *H-Power* facilities is not the best way to handle it because the residual ash needs to be disposed off properly. Besides, no one wants to have a landfill in the neighborhood.

We also must remember that *H-Power* at best only burns about 70% of our solid waste. The rest sits in a landfill along with the ash.

We need to **REDUCE** as well as **RE-USE, RECYCLE** and **RECLAIM**.

3/27/2008

About a year ago, I started researching corn-based "plastic" which decompose within months as a substitute for petroleum-based materials thinking that I could buy these products for garbage can liners and pet waste disposal and use cloth bags for shopping. I'd bought into the retailers' arguments that it was too expensive to use anything but regular plastic and that it would drive up costs.

It turns out that these corn-based products when purchased in very large quantities by supermarket chains would wind up costing no more than two cents - depending upon the manufacturer - per bag. That is certainly affordable and definitely makes much more sense than shipping our solid waste across the Pacific Ocean - thus increasing our greenhouse gas emissions by as much as 5% when the *State of Hawai`i* is working towards significant reductions over the next 15 years. We urge that you pass **HB 2434**.

Mahalo for the opportunity to submit testimony in support of **HCR 191/HR 160**.

The Windward Ahupua`a Alliance works to educate & inform residents, visitors, businesses, policymakers, and the media about using Smart Growth planning principles which promote sustainability. These include: Designing long-term waste management systems; improving illegal dumping/derelict vehicle legislation & enforcement; developing & implementing comprehensive curbside recycling programs; providing research & support on public access issues; establishing both state & county-level "legacy lands" funds to support affordable workforce housing initiatives and critical land purchases to protect against inappropriate development; creating alternative energy systems to reduce Hawai`i's dependency on fossil fuels & to mitigate the impacts of global warming; and, setting long-term watershed protection policies based upon ahupua`a concepts & principles.

Beach Environmental Awareness Campaign Hawai'i

P.O.Box 25284 · Honolulu · Hawai'i · 96825
808 393 2168 · [REDACTED] · www.b-e-a-c-h.org

March 27, 2008

Testimony in support of House Concurrent Resolution 191 REQUESTING COUNTIES TO DEVELOP AND IMPLEMENT PROGRAMS TO ENCOURAGE RETAILERS TO INCREASE THE USE OF ENVIRONMENTALLY PREFERABLE ALTERNATIVES TO NON-BIODEGRADABLE PLASTIC BAGS.

From: Dean Otsuki & Suzanne Frazer, Beach Environmental Awareness Campaign Hawai'i.

We strongly support requiring counties to develop and implement programs to encourage retailers to increase the use of environmentally preferable alternatives to non-biodegradable plastic bags. This is an important first step towards addressing the growing problem of plastic accumulation in the ocean, waterways and land. The risk of not addressing this problem is devastation of marine life. Plastic now outnumbers plankton 200 to 1 (latest research from Algalita Foundation). All sizes of marine organisms are ingesting plastic from the bottom of the food chain (plankton) to the top (whales etc.). This also means that plastic is in the human food chain as well.

The dangers of plastic bags is that although they do break down into smaller and smaller pieces, they do not bio-degrade. Dangerous toxins such as PCB's are leached into the land and water. These chemicals cause disruption of the endocrine system of marine life as well as humans.

Plastic bags are extremely dangerous to young sea turtles as all species of sea turtle hatchlings eat jellyfish. A floating plastic bag is easily mistaken by sea turtles for a jellyfish. Ingesting plastic bags causes the turtle to suffocate and die. Adult sea turtles such as the Leatherback, Loggerhead and Olive Ridley also eat jellyfish, with this being the main source of food for the endangered Leatherback sea turtle. All other sea turtle species are listed as threatened. We must take steps to prevent further devastation of these species of turtles. Banning plastic shopping bags is a necessary step towards protecting these species.

Implementing programs to encourage retailers to to increase the use of environmentally preferable alternatives to non-biodegradable plastic bags is an easy step towards helping the environment.

The Beach Environmental Awareness Campaign Hawai'i (B.E.A.C.H.) is a non-profit, volunteer organization bringing awareness and solutions to the problem of marine debris and litter on Hawai'i's beaches. B.E.A.C.H. co-ordinates beach clean-ups, litter prevention campaigns and presentations to schools and community organizations in order to educate and bring

Representative Hermina Morita, Chair
Representative Mele Carroll, Vice Chair
Committee on Energy & Environmental Protection
State Capitol, Honolulu, Hawaii 96813



HEARING Thursday, March 27, 2008
9:30 am
Conference Room 312

RE: HCR191 & HR160, Requesting Counties to Develop and Implement Programs To Encourage Retailers to Increase the Use of Environmentally Preferable Alternatives to Non-Biodegradable Plastic Bags.

Chair Morita, Vice Chair Carroll, and Members of the Committee:

Retail Merchants of Hawaii (RMH) is a not-for-profit trade organization representing about 200 members and over 2,000 storefronts, and is committed to support the retail industry and business in general in Hawaii.

As in HCR191 and HR160, for the most part just about every measure introduced to address non-biodegradable/non-compostable plastic bags begins with the same litany of un-documented assumptions. Once again, I attach the ULS Report, which reviews life cycle data relating to disposable, biodegradable and compostable grocery bags. Please note the extensive list of footnotes substantiating these findings.

We therefore object to the nine "whereas" suppositions.

Our testimony in opposition of all measures that proposed a ban on plastic bags provided to consumers at the point of sale, began with the statement: **Hawaii's retailers unquestionably support initiatives to preserve and protect our environment. The solution to the plastic bag issue is not in a total ban, but in the wise management of this resource, i.e., the "reduce, reuse and recycle" principle.**

We consistently have proposed a comprehensive alternative to a ban: a program that allows retailers to continue to provide plastic bags at check out for those customers who prefer them, to make reusable bags available for those customers who want them, and to provide convenient bins available to consumers to deposit excess plastic, which would then be recycled. Because changing consumer behavior was critical to the success of this program, an educational campaign was an integral component of the proposal.

Needless-to-say, none of the government entities to which we presented this proposal accepted our program.

The reality is that many of Hawaii's retailers in all the Counties have already initiated recycling programs: providing recycling bins for consumers, making reusable tote bags available and crediting consumers for reusing plastic bags and reusable bags at check out. Larger retailers bale and ship the collected bags out of the state for recycling.

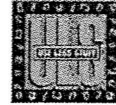
On March 22, eight Maui County retailers (Ah Fooks, Friendly Market, Haiku Grocery Store, Kualapuu Market, Misaki's Inc., Pine Isle Market, Pukalani Superette, and Wal-Mart) cooperatively sponsored "**Maui County Retailers Recycle.**" In one day, almost 2,000 reusable tote bags were given to customers in exchange for recyclable plastic bags; the bags collected filled a 45-foot shipping container. Wal-mart baled and shipped the bags to the mainland for recycling.

Retailers have taken the important first step as caretakers of the environment. We welcome the Counties' partnerships, and do not believe that we need a mandate to do so. Thank you for the opportunity to testify.

A handwritten signature in black ink, appearing to read 'Carol Carroll', is written over a faint, larger version of the signature.

President

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REVIEW OF LIFE CYCLE DATA RELATING TO DISPOSABLE, COMPOSTABLE, BIODEGRADABLE, AND REUSABLE GROCERY BAGS

I. BACKGROUND

In March 2007, the Board of Supervisors of the City of San Francisco passed an ordinance effectively banning the use of plastic grocery bags at supermarkets and large pharmacies. The Board's objective was to stop environmental degradation and reduce litter, and its solution was to legislate the replacement of traditional plastic bags with reusable bags or bags made from paper or compostable plastic.

In an effort to gauge the impact of the Board's decision, both in terms of environmental impact and litter reduction, the Editors of *The ULS Report* have examined a number of credible third-party research reports, and used the findings to develop their own conclusions and recommendations.

II. METHODOLOGY

An examination was made of three studies that compared the environmental impacts of various grocery bags, or provided data widely used to do so:

1. Carrefour Group, an international retail chain that was founded in France and is second only to Wal-Mart in terms of global retail revenues, commissioned a Life Cycle Assessment (LCA) Study by Price-Waterhouse-Coopers/EcoBalance (*Évaluation des impacts environnementaux des sacs de caisse, February 2004, #300940BE8*) that compared the environmental impact of four types of bags: plastic made from high density polyethylene (HDPE), paper, biodegradable plastic (50% corn starch and 50% polycaprolactone compostable plastic), and reusable plastic (flexible PE). The study evaluated environmental impacts from material production, through bag manufacturing and transport, to end of life management.

The study was completed according to ISO standards 14040-14043, and peer reviewed by the French environmental institute, ADEME, the Agency for Environment and Energy Management. The first review was by Henri Lecouls, an independent lifecycle analysis expert assisted by Laura Degallaix, representative of the Federal Consumers' Union, Que Choisir, and Dominique Royet, World Wildlife Federation (WWF) representative. A second review was made by related parties: APME (European Plastics Manufacturers Association); CEPI (Confederation of European Paper Industries); and Novamont, manufacturer of the biodegradable plastic assessed in the study.

2. *Life Cycle Inventories for Packagings*, Environmental Series No. 250/1, Swiss Agency for the Environment, Forests and Landscape (SAEFL), 1998. The study was critically reviewed by corporate and association members representing the paper, plastics, glass, aluminum and steel packaging industries.

3. *Eco-Profiles of the European Plastics Industry*, performed by I. Boustead for PlasticsEurope, 2005. This series was developed by LCA pioneer Boustead Consulting and conforms wherever possible to ISO standards 14040-14043. The data on polyethylene film are also referenced in the SAEFL study listed above.

Relevant data published by the U.S. Environmental Protection Agency (EPA) were also reviewed. This information was found on the EPA's website (www.epa.gov), and includes data from its well-known *Municipal Solid Waste in the United States* series.

III. STUDY LIMITATIONS

1. Findings, conclusions, and recommendations are based on data that have been obtained through publicly available channels or through the broad group of contacts that *The ULS Report* has developed. There may be other data available that refute, confirm, or extend the findings herein developed.
2. Results are based upon an analysis of quantitative data, especially in relation to materials consumption, energy and water usage, pollution, and greenhouse gas (GHG) production. Because of their qualitative and personal nature, issues that transcend a scientific approach, such as the social value of renewable vs. non-renewable resources and composting vs. landfilling, are best considered independently by the reader.
3. Other than U.S. EPA data, the other studies originated in Europe and are based upon European manufacturing processes. Because production processes are relatively similar globally, the data provide accurate assessments between materials that can be used to draw valid conclusions in the United States.

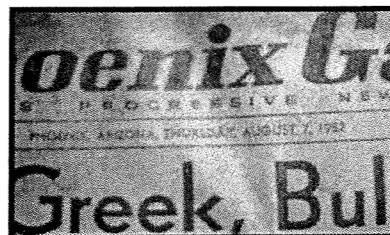
IV. FINDINGS

A. Biodegradation/Compostability

While paper and certain plastics may be biodegradable or compostable in specially designed industrial facilities, evidence indicates that this feature may be of little value in the effort to reduce waste:

1. According to the EPA, "Current research demonstrates that paper in today's landfills does not degrade or break down at a substantially faster rate than plastic does. In fact, nothing completely degrades in modern landfills due to the lack of water, light, oxygen, and other important elements that are necessary for the degradation process to be completed."¹

As evidence of this, here is a photo of a newspaper buried in an Arizona landfill and dug up after more than three decades. As can be clearly seen, paper does not degrade rapidly in landfills. (Photo credit: Dr. William Rathje, Founder of The Garbage Project at The University of Arizona, and ULS Report Contributing Editor.)



Compostable plastics, which are produced from plant-based feedstocks, do not degrade in landfills, either. According to Natureworks®, a producer of a corn-based plastic known as PLA, containers made from its material will last as long in landfills as containers made from traditional plastics.²

2. In order to breakdown as intended, compostable plastics must be sent to an industrial or food composting facility, rather than to backyard piles or municipal composting centers. Since there are apparently fewer than 100 of these facilities functioning in the entire United States, the economic and environmental costs of wide-scale plastics composting are prohibitive, significantly reducing the value of such an alternative.³
3. By definition, composting and biodgradation release carbon dioxide (CO₂), a greenhouse gas, into the atmosphere, increasing the potential for climate change. For example, composted paper produces approximately twice the CO₂ emissions produced by non-composted paper. (See Paragraph B.2. just below for specific details.)

B. Waste, Energy Consumption, Greenhouse Gas Emissions

The evidence does not support conventional wisdom that paper bags are a more environmentally sustainable alternative than plastic bags. While this is certainly counterintuitive for many people, relevant facts include the following:

1. Plastic bags generate 60% less greenhouse gas emissions than uncomposted paper bags, and 79% less greenhouse gas emissions than composted paper bags. The plastic bags generate 3,097 tons of CO₂ equivalents per 100 million bags; while uncomposted paper bags generate 7,621 tons, and composted paper bags generate 14,558 tons, per 100 million bags produced.⁴
2. Plastic bags consume less than 4% of the water needed to make paper bags. It takes 5,527 cubic meters of water to produce 100 million plastic bags, versus 145,729 cubic meters of water to produce 100 million paper bags.⁵
3. Plastic grocery bags consume 40% less energy during production and generate 80% less solid waste than paper bags.⁶ Significantly, even though traditional disposable plastic bags are produced from fossil fuels, the total non-renewable energy consumed during their lifecycle is no greater than the non-renewable energy consumed during the lifecycle of paper and biodegradable plastic bags.⁷
4. Paper sacks generate 70 percent more air, and 50 times more water pollutants, than plastic bags.⁸
5. It takes 91 percent less energy to recycle a pound of plastic than it takes to recycle a pound of paper.⁹
6. After three uses, reusable plastic bags are superior to all types of disposable bags --paper, polyethylene and compostable plastic -- across all significant environmental indicators.¹⁰

C. Litter

While the data appear to indicate that paper and compostable plastic bags may account for less litter, data also indicates that this finding is offset by the increased environmental impacts these bags produce versus traditional plastic bags:

1. The manufacture of paper bags consumes three times more water and emits about 80% more greenhouse gases than the production of plastic bags.¹¹
2. Compared to disposable plastic bags, biodegradable plastic bags generate higher levels of greenhouse gas emissions, atmospheric acidification and eutrophication (a process whereby bodies of water receive excess nutrients that stimulate excessive plant growth, such as algae blooms).¹²

V. CONCLUSIONS/INDICATED ACTIONS

The conclusion to be drawn about how to reduce the environmental impacts and litter associated with grocery bags is very much in line with both longstanding EPA guidelines and the ULS Report philosophy: the issue is not paper or plastic, but rather finding ways to reduce, reuse, and recycle both of them - in that order. By putting more items in fewer bags, avoiding double bagging, switching to durable tote bags, and reusing and recycling disposable bags, significant reductions in material and non-renewable energy consumption, pollution, solid waste, greenhouse gas emissions, and litter, will occur.

And, while recycling can help save resources, its real value lies in the reduction of greenhouse gas emissions, and the minimization of waste going to landfills. Also, recycling helps reduce litter, as bags are contained and stored. Containment reduces the potential for them to be left in open spaces, where they become eyesores.

VI. SUMMARY

Legislation designed to reduce environmental impacts and litter by outlawing grocery bags based on the material from which they are produced will not deliver the intended results. While some litter reduction might take place, it would be outweighed by the disadvantages that would subsequently occur (increased solid waste and greenhouse gas emissions). Ironically, reducing the use of traditional plastic bags would not even reduce the reliance on fossil fuels, as paper and biodegradable plastic bags consume just as much non-renewable energy during their full lifecycle.

Further, an Internet scan of available government and non-profit information for the United States, United Kingdom, Canada and Australia indicates that chewing gum and cigarette butts account for up to 95% of the litter generated in the English-speaking world.¹³ Thus, there would appear to be far better and potentially more effective legislative opportunities available if the objective is to significantly reduce litter.

Again, when it comes to reducing the environmental and litter impacts of grocery and merchandise bags, the solution lies in a.) minimizing the materials used to produce all types of bags, regardless of their composition, and b.) building public awareness and motivation to reduce, reuse and recycle these bags - in that order.



Robert Lilienfeld, Editor

Footnotes

¹ U.S. Environmental Protection Agency (EPA) website, *Questions About Your Community: Shopping Bags: Paper or Plastic or... ?* (www.epa.gov/region1/communities/shopbags.html).

² *Corn Plastic to the Rescue*, by Elizabeth Royte, *Smithsonian*, August, 2006 (www.smithsonianmag.com/issues/2006/august/pla.php?page=1).

³ These figures were provided by a number of experts, but due to the fluctuating dynamics of the composting industry, no firm citation can be given. One article that mentioned the relative unavailability of industrial and food composting was *Composting that Plastic* by Eliza Barclay, *Metropolis Magazine*, March 1, 2004 (www.metropolismag.com/cda/story.php?artid=153). See also the *BioCycle* site www.findacomposter.com.

⁴ *Life Cycle Inventories for Packagings*, Volume 1, SAEFL, 1998, Environmental Series 250/I and *Eco-Profiles of the European Plastics Industry*, developed by I. Boustead for PlasticsEurope, March, 2005 (www.plasticseurope.org/content/Default.asp?PageID=404&IsNewWindow=True).

⁵ Ibid.

⁶ U.S. EPA website, (www.epa.gov/region1/communities/shopbags.html).

⁷ *Évaluation des impacts environnementaux des sacs de caisse Carrefour* (Evaluation of the Environmental Impact of Carrefour Merchandise Bags), prepared by Price- Waterhouse-Coopers/Ecobilan (EcoBalance), February 2004, #300940BE8. (www.ademe.fr/htdocs/actualite/rapport_carrefour_post_revue_critique_v4.pdf).

⁸ U.S. EPA website, (www.epa.gov/region1/communities/shopbags.html).

⁹ U.S. EPA website, (www.epa.gov/region1/communities/shopbags.html).

¹⁰ *Évaluation des impacts environnementaux des sacs de caisse Carrefour. Op cit.*

¹¹ Ibid.

¹² Ibid.

¹³ See *Litter Composition Survey of England*, October 2004, produced by ENCAMS for INCPEN (www.incpen.org/pages/userdata/incp/LitterCompSurvey24Jan2005.pdf). Also see *Facts About Litter* from an Australian governmental site (www.environment.nsw.gov.au/litter/factsaboutlitter.htm), and equivalent government and non-profit sites in Canada and the United States, such as [Keep America Beautiful](http://www.KeepAmericaBeautiful.org).