

America's Plastics Industry Efforts to Prevent Marine Debris

June 2009





Presentation Overview

- ACC Plastics Division
- The Marine Debris (MD) Issue
- Plastics Performance and Sustainability
- ACC's MD Prevention Strategy



The Marine Debris Issue

- Littered and discarded materials end up in rivers, oceans and on beaches.
 - Sources:
 - Land-based debris
 - Packaging, other trash and plastic pellets
 - Marine-based debris
 - Trash and derelict fishing gear
- All types of materials are present, but plastics are the most visible.



Why Plastics?

Product manufacturers and consumers choose plastic because:

- Reduced material use
 - 56% less greenhouse gas¹
 - 26% less energy
- Shatter resistant
- Protects contents and maintains freshness



¹ GUA - Gesellschaft für umfassende Analysen, "The Contribution of Plastic Products to Resource Efficiency," Vienna, 2005



Plastics Industry MD Prevention Strategy Development

ACC Marine Debris Solutions Workshop

La Jolla, CA

November, 2007





Marine Debris Solutions Workshop

Attendees

- **Federal Agencies**
 - Coast Guard
 - U.S. EPA
 - Department of the Interior
 - Fish and Wildlife Service
 - NOAA
 - Office of the President/CEQ
- **ACC Members**
 - ExxonMobil Chemical
 - The Dow Chemical Co.
 - Total Petrochemicals USA
- **Other Industry Partners**
 - Coca-Cola Company
 - ITW-Hi Cone
 - Sheavly Consultants
- **National NGOs**
 - Boat US
 - Keep America Beautiful
 - National Fish & Wildlife Foundation
 - Ocean Conservancy
- **CA Agencies & NGOs**
 - Algalita Marine Research Foundation
 - Aquarium of the Pacific
 - CA Coastal Commission
 - CA Dept of Transportation
 - CA Integrated Waste Mgt Board
 - Heal the Bay
 - Keep California Beautiful
 - LA Regional Water Control Board
 - Ocean Protection Council
 - Scripps Institution of Oceanography
 - State Water Resources Control Board



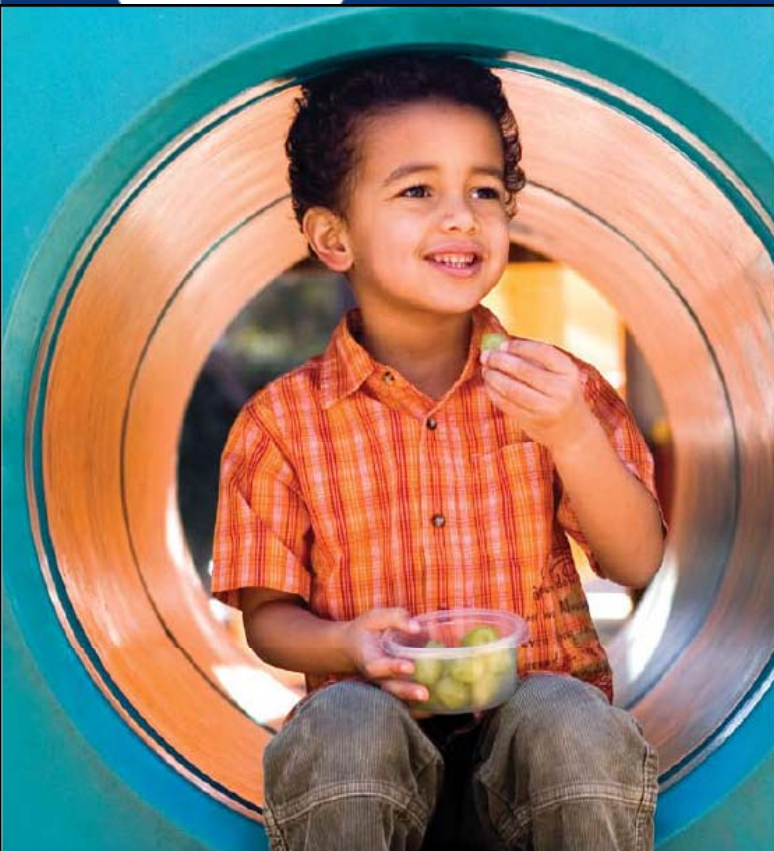
ACC Marine Debris Solutions Workshop Conclusions

Marine Debris Prevention Strategy:

1. Promote and sustain key partnerships.
2. Develop a nationwide education strategy that promotes litter control as a cultural norm.
3. Increase recycling, particularly of plastics, as a cornerstone of the anti-litter education effort.



Partnership to Promote Recycling and Prevent Litter



PLASTICS. TOO VALUABLE TO WASTE. RECYCLE.SM

A MESSAGE FROM THE PLASTICS INDUSTRIES OF THE AMERICAN CHEMISTRY COUNCIL.



keep **california**
BEAUTIFUL

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www.2valuable2waste.com





Expanding Recycling Access Away-from-Home



- Over 500 Bins in 19 coastal locations
- Expanding to California coastal highway rest stops

Promote Litter Reduction and Expand Recycling



ACC Recycling Programs

- Bottle recycling
- Rigid container recycling
- Bag and film recycling

Nationwide Education Strategy

Keep America Beautiful

Litter Education Program



- Develop and implement a national education and outreach program
 - ACC a founding partner
- Goals
 - Change the culture with respect to litter
 - Plastics industry plays a key role in national litter prevention efforts



DO SOMETHING BEAUTIFUL.





Education: Aquarium of the Pacific

“Spin the Bottle”

Permanent education exhibit:

- Plastic debris problems in ocean
- Benefits of plastic products, recycling and proper disposal

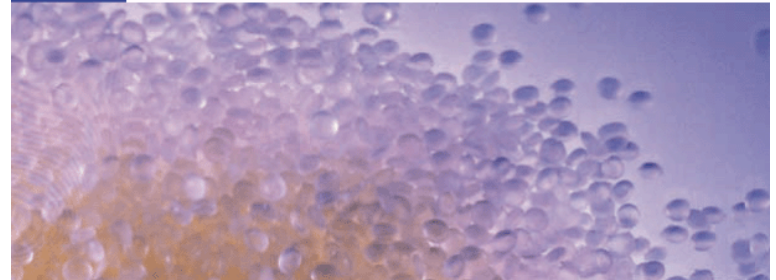




Prevention--Pellet Loss

Operation Clean Sweep (1992):

- American Chemistry Council and Society of the Plastics Industry (SPI)
- Voluntary Best Management Practices
- Technical assistance for all steps of the supply chain
 - Posters, BMP Manual, Employee Check Lists
 - Implementation tools available at no cost @ www.opcleansweep.org
- Codified in California (AB258)



Make zero pellet loss your goal.



OCS Tools for Industry Employees

PREVENT PELLET LOSS



- **CONTAIN SPILLS**
- **CLEAN UP SWIFTLY & EFFECTIVELY**
- **RECYCLE OR DISPOSE OF PROPERLY**

 **Operation Clean Sweep**[®]

DO YOUR PART TO HELP PROTECT THE ENVIRONMENT



Zero

Pellet Loss

Our Goal



- **Contain Spills**
- **Clean Up Swiftly and Effectively**
- **Recycle or Dispose of Properly**

 **Operation Clean Sweep**[®]



Do Your Part to Protect the Environment



California AB 258

California Pellet Containment Bill—ACC Supported

- Promoted to plastic processors through ads in *Plastics News* and other trade pubs



ACC Support of and Participation in Local and National Cleanups

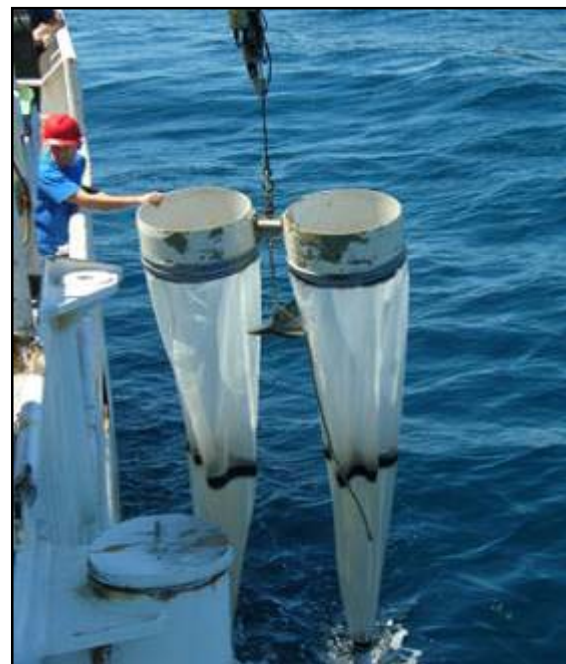
- Keep California Beautiful, Great American Cleanup™
- California Coastal Cleanup
- Washington D.C. Area, Anacostia River Cleanup Sponsor
- Other local support



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Support for Marine Debris Research





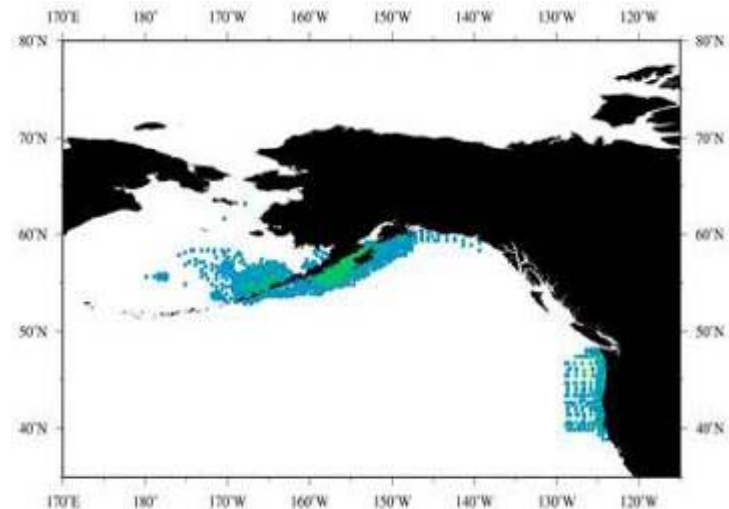
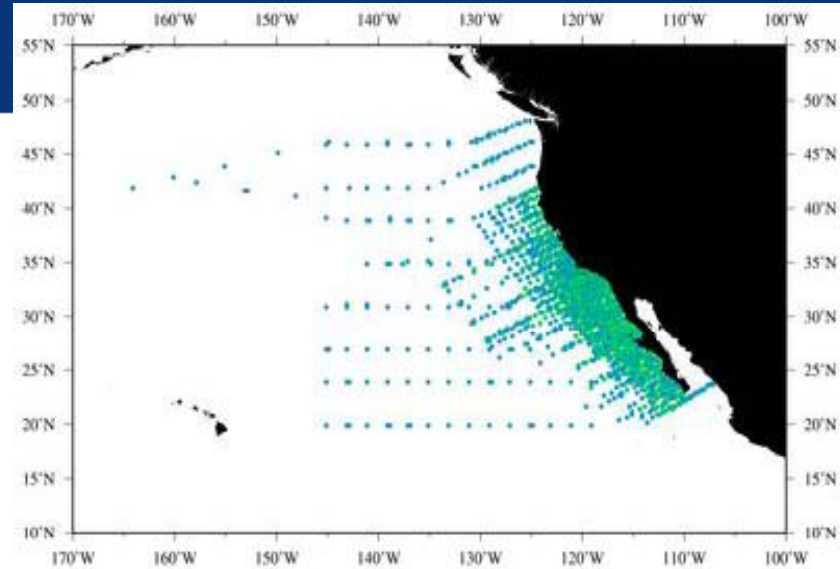
Plastic Particle Research Goals

- Sponsored with Federal and California agencies and Foundations
 - NOAA, National Fish and Wildlife Foundation, California Fish and Game, Scripps Institute of Oceanography
- Understand the extent of plastic debris off the coast of California to establish baseline perspective relative to the data from the N. Pacific Gyre



Marine Debris Particle Research

- **Sampling of the North Pacific**
 - CA coast
 - California Cooperative Oceanic Fisheries Investigations (CalCOFI)
 - Southwest Fisheries Science Center (NOAA-SWFSC)
 - Bering Sea
 - Alaska Fisheries Science Center (NOAA-ASFC)





Marine Debris Particle Research Conclusions

- 593 samples were taken over a year during 4 cruises
- Debris particles are present at extremely low levels.
 - *Less than 1 milligram per cubic meter of water.*
 - The total mass of non-plastic debris particles from all samples and cruises combined was 2.37 grams, while the mass of plastic particles was 1.45 grams.
- Zooplankton biomass was many orders of magnitude greater than the mass of debris particles.
- Almost all debris particles were found in the neuston (surface) layer.
- Sub-surface debris particles were found only in the January 07 cruise samples.
- Likelihood of ingestion is minimal due to the low concentration of debris relative to zooplankton.
- Source: <http://marinedebris.noaa.gov/marinedebris101/documents/Microdebris08.pdf>



NOAA Micro Plastic Workshop

University of Washington, Tacoma, WA

September 9-10, 2008

- Review of all known research on micro-plastic marine debris
- Identification of the knowledge gaps
- Recommended next steps for research
- Proceedings summary at:

<http://marinedebris.noaa.gov/projects/rschwkshop.html#proceedings>





ACC Next Steps

Continuing Implementation of Workshop Recommendations

1. Support anti—litter campaigns.
2. Continue pellet loss prevention efforts.
3. Expand access to recycling--California Department of Transportation.
4. Continue working to increase awareness of plastics recycling opportunities nationally.



Thank You

For more on marine debris
and links to NOAA, Ocean
Conservancy and other
resources:

www.MarineDebrisSolutions.org

