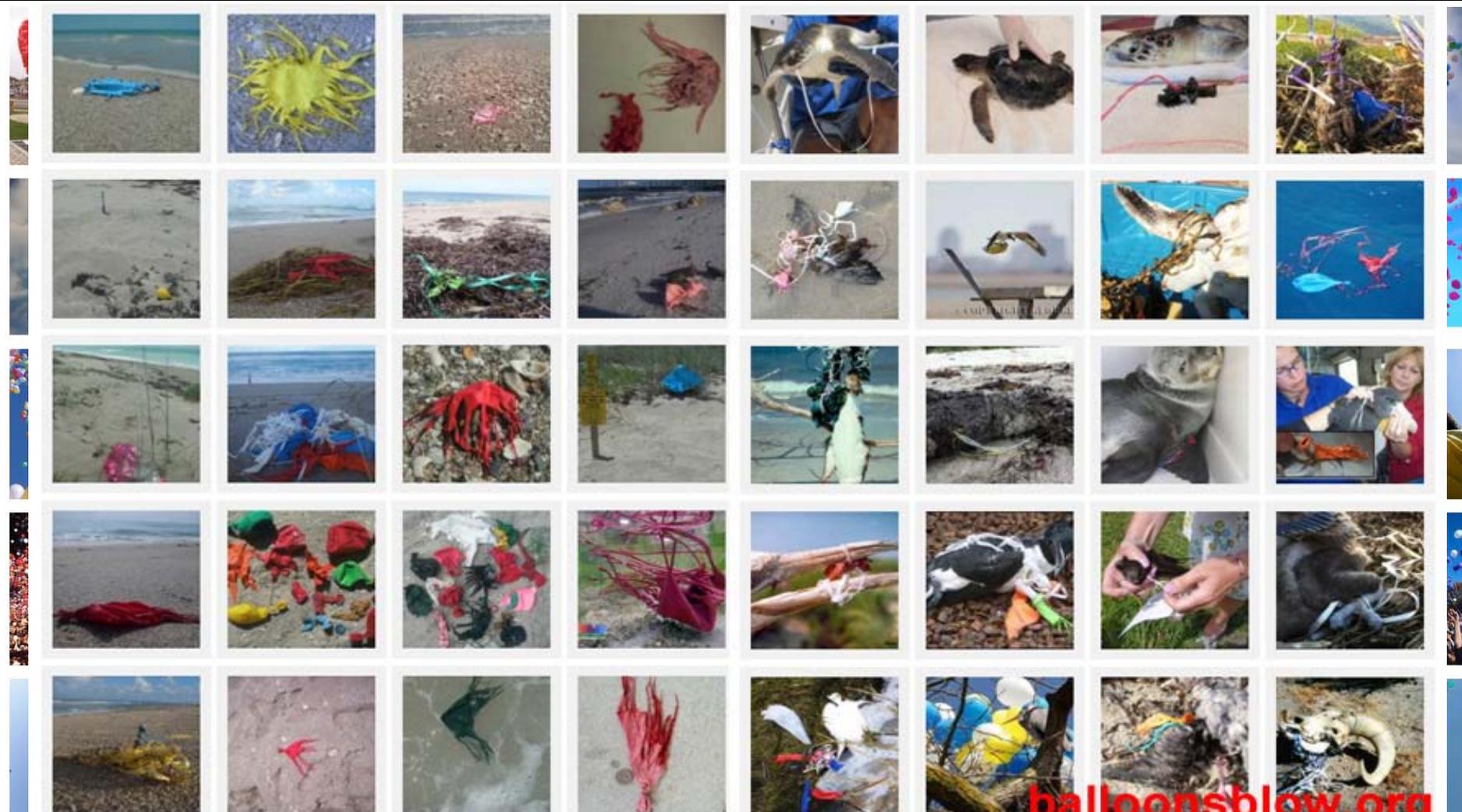


# Balloons as Litter: A Rising Concern

*Christina Trapani, Virginia Aquarium Stranding Response Program*

*Kathy O'Hara, Virginia Aquarium*

*Katie Register, Clean Virginia Waterways*



# Balloons as Litter: What goes up, will come down!



(Photo from Tuesday O'Hara Fund)

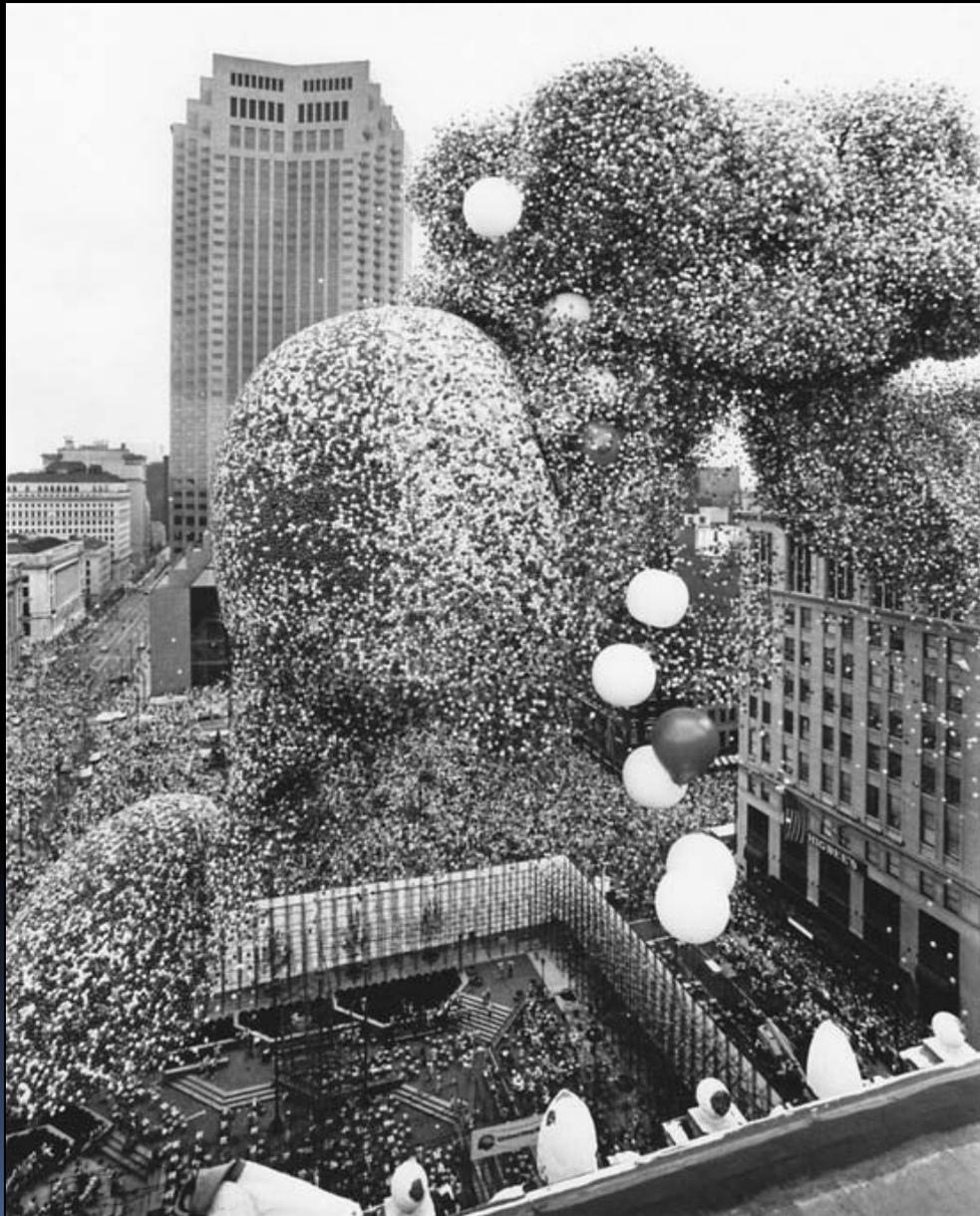


(Photo from Florida Fish and Wildlife Conservation Commission)

## A Unique Form of Litter!

“Balloons are the only item people actually buy to create litter.”

“Balloons don't really go to Heaven”



# 1,500,000

In 1986, Cleveland's attempt to set a world record resulted in

**1.5 million balloons that:**

- shut down the nearby airport
  - blanketed Lake Erie
  - spooked horses
- interrupted a Coast Guard search and rescue of two missing boaters.

# Balloons: A Unique Form of Litter



Watermark Event Management

In 1994 Disney broke the World Record for the largest balloon release

**1,592, 744**

# Balloons as Litter: The Numbers

93,913

Balloons collected on world beaches in one day- 2011 ICC

United States	38,535	California	7640 *
India	14351	Florida	5702 *
Ecuador	8571	New York	5421 *
Dominican Republic	5736	Texas	3337
Canada	5636	New Jersey	1829
Brazil	5110	Virginia	808 *
Puerto Rico	2877		

\* States with current balloon legislation

# Balloons as Litter: The Numbers

Balloons Per Mile  
Based on 2011 ICC Results

Worldwide = 4.52 balloons per mile

United States	4	California	3.8 *
India	43.5	Florida	5.6 *
Ecuador	41.5	New York	20.6 *
Dominican Republic	67	Texas	14.5
Canada	3	New Jersey	17.4
Brazil	4	Virginia+	2 .4*
Puerto Rico	18		

\* States with current balloon legislation

+ Reported miles of Virginia cleaned =337

# Balloons as Litter: Sources

## Mass Releases

- Celebrations
- Weddings
- Political Rallies
- Memorial Services
- Sporting Events
- Store Openings
- Marketing Event
- Schools
- Non-Profits



## Single, low number (accidental?) releases

- Restaurants
- Real Estate Companies
- Grocery Stores
- Fairs and Festivals
- Car Dealerships
- Parades



# Balloons as Litter: Latex Balloons

Biodegradable, Natural Latex!



- Produced from the sap of the rubber tree
- Made from 100% organic material and it's 100% biodegradable
- Stress and exposure assist the decomposition cycle
- Research has shown that under similar conditions latex decomposes as quickly as an oak leaf. [~Balloon Council](#)

# Balloons as Litter: Latex Balloons

Research shows that most of these latex balloons -- the ones that are well-tied and have no structural flaws -- rise to an altitude of about five miles, where they freeze, breaking into spaghetti-like pieces that scatter as they return to earth. ~The Balloon Council



# Balloons as Litter: Latex Balloons

**ARKive**  
www.arkive.org



© Visuals Unlimited / naturepl.com

# Balloons as Litter: Latex Balloons



# Balloons as Litter: A Mass Release Gone Wrong



Photo: Lacy Atkins, The Chronicle



Photo: Mathew Grimm, Special To The Chronicle

- Approximately 10,000 red balloons were released March 2, 2011 by gaming company in San Francisco
- Bad weather prevented balloons from getting far off the ground
- Company promised to clean up the mess

# Balloons as Litter: A Mass Release Gone Wrong

A statement from THQ assured concerned bayside residents that the balloons released "were made from a 100% organic product and are 100% biodegradable," with no history of causing environmental pollution.

~Sfgate.com



Photo: Andrea Swenson Dunlap

# Balloons as Litter: Mylar?

(plastic)

- "Metalization" of plastic sheeting that has given us foil balloons comes directly out of the NASA Space Mission
- The balloon industry refers to them as "foil" balloons, because they are made of nylon sheet, coated on one side with polyethylene and metallized on the other.

~<http://www.balloonhq.com/faq/making.html>



# Balloons as Litter: Foil, Metallic



Sea turtles love jellies!

# Balloons as Litter: Foil, Metallic



Dr. Mike Dawson

# Balloons as Litter: Foil, Metallic



Kathy O'Hara

# Balloons as Litter: Foil, Metallic



# Balloons as Litter: Foil, Metallic



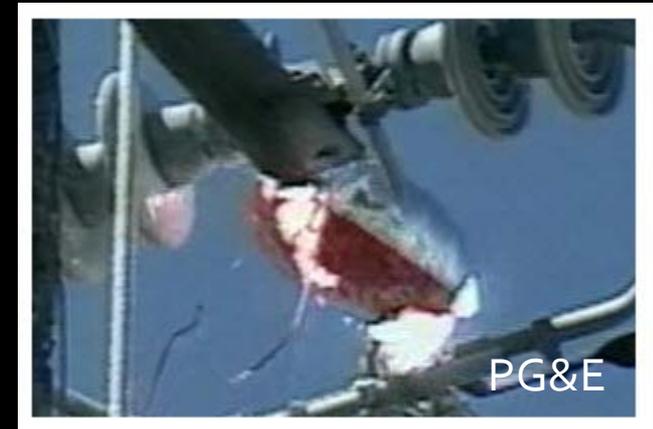
The New Jersey Osprey Project

# Balloons as Litter: Mylar, Foil, Metallic

The most recent outage occurred on June 1, when a Mylar balloon became tangled in power lines near Scholl Canyon Park, leaving over 14-hundred residents without power for more than 25 minutes. ~City of Glendale Water and Power

PHOENIX - Nearly 5,000 customers were left without power Wednesday, and APS thinks a Mylar balloon may have tripped a power line. ~

<http://www.myfoxphoenix.com/story/18661115/2012/05/30/stray-balloon-may-be-cause-of-power-outage>



Last year, metallic balloons that drifted into PG&E power lines caused nearly 300 outages, affecting electric service to more than 150,000 customers throughout Northern and Central California. ~[www.sanluisobispo.com/2012/03/10/1984463/mylar-balloons-are-hazardous-to.html](http://www.sanluisobispo.com/2012/03/10/1984463/mylar-balloons-are-hazardous-to.html)



A metallic party balloon is blamed for causing a power outage in southwest neighborhoods of El Centro on Wednesday afternoon, leaving hundreds of homes and businesses without air conditioning as temperatures hovered around 110 degrees. ~[ivnews.info](http://ivnews.info)

# Balloons as Litter: Attachments



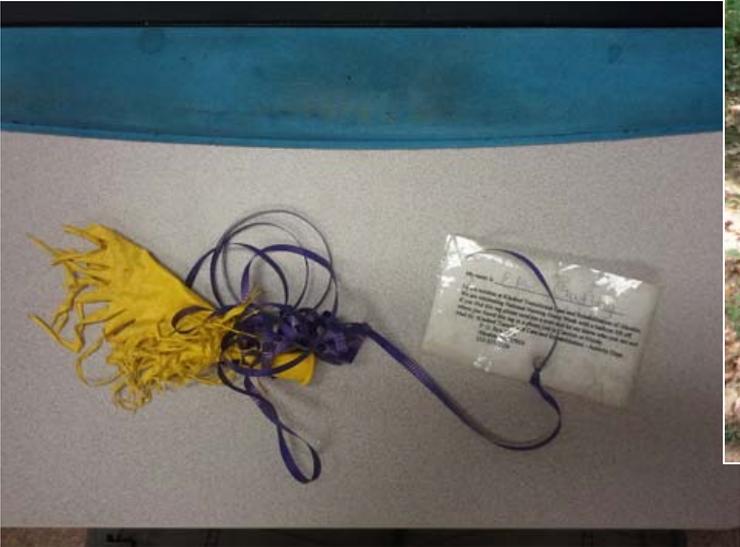
VAQS



VAQS



CVW



VAQS



Balloons Blow

# Balloons as Litter: Attachments



(Photo from Florida Fish and Wildlife Conservation Commission)

# Balloons as Litter: Attachments



# Balloons as Litter: Attachments



# Balloons as Litter: Plastic Balloons



Former North Korean defectors living in South Korea release balloons containing snacks called “Choco Pie” and anti-Pyongyang leaflets towards the North near the demilitarized zone separating the two Koreas in Ganghwa, northwest of Seoul. (Lee Jae-Won/Reuters)

# Balloons as Litter: Weather Balloons?



Radiosonde Museum of North America



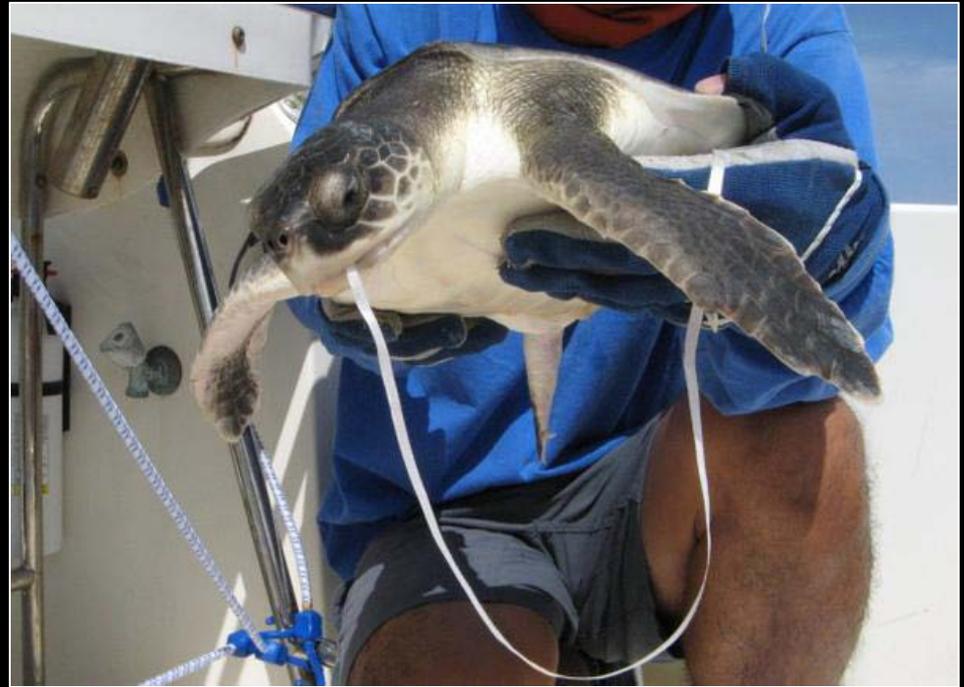
Virginia Aquarium Stranding Response Program

- In 1999, more than 440,000 soundings were made from 992 stations outside the US
- The US NWS releases about 75,000 radiosondes each year
- More than half a million radiosondes are launched around the world every year

# Balloons as Litter: Impacts on Wildlife

## Who is being affected

- loggerhead sea turtle\*\*\*
- Kemp's ridley sea turtle\*\*\*\*
- green sea turtle\*\*\*
- hawksbill sea turtle\*\*\*\*
- leatherback sea turtle\*\*\*\*
- pygmy sperm whale\*
- northern gannet
- Guadalupe fur seal\*\*\* (MMPA depleted)
- laughing gull
- common dolphin\*
- Risso's dolphin\*
- blue shark\*\*
- northern fulmar+
- western gull
- cormorant
- petrel
- guillemot
- rusty blackbird
- swift
- anhinga
- osprey



Blair Witherington

+moderate concern (N. America)

\*protected (MMPA); may become threatened with extinction (CITES App II)

\*\* near threatened (IUCN)

\*\*\* threatened (ESA)

\*\*\*\* endangered (ESA)

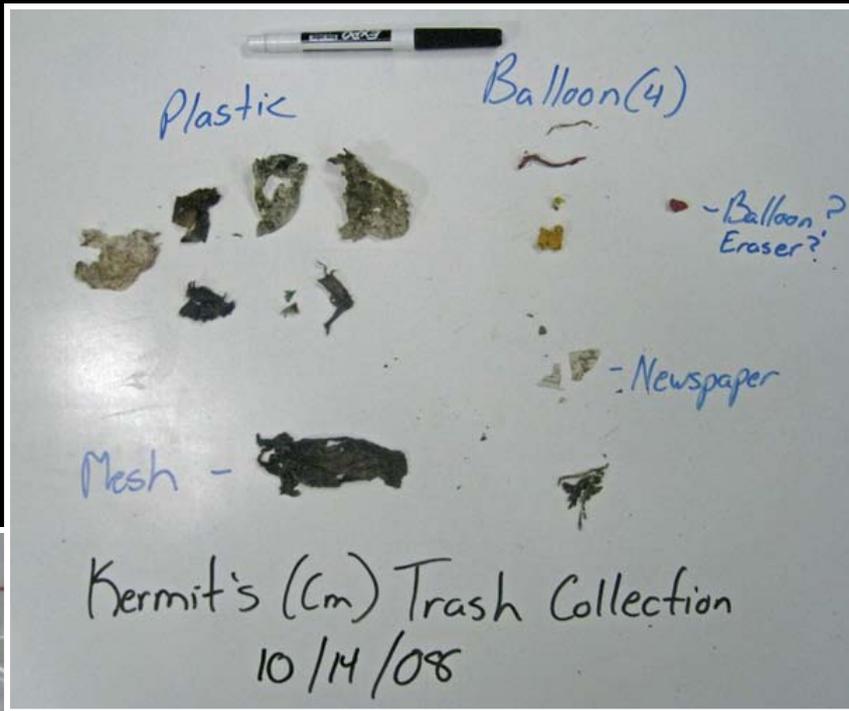
# Balloons as Litter: Cause and Effect?



Virginia Aquarium Stranding Response Program



# Balloons as Litter: Cause and Effect?



# Balloons as Litter: Cause and Effect?



October 21



November 3



November 10



December 19

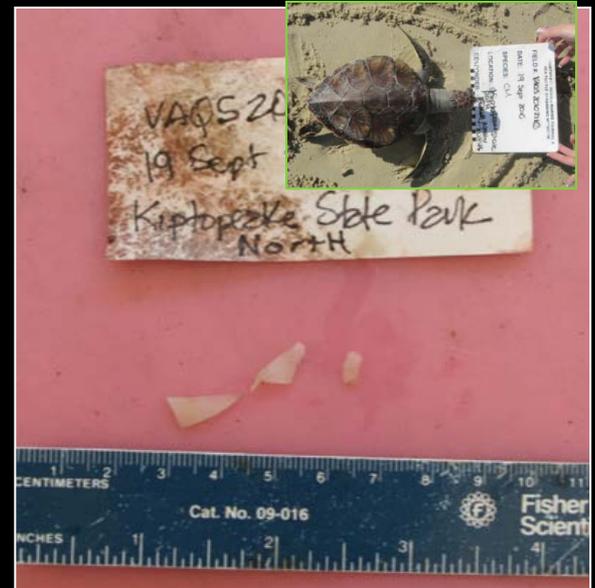


January 14



March 16

# Balloons as Litter: Cause and Effect?

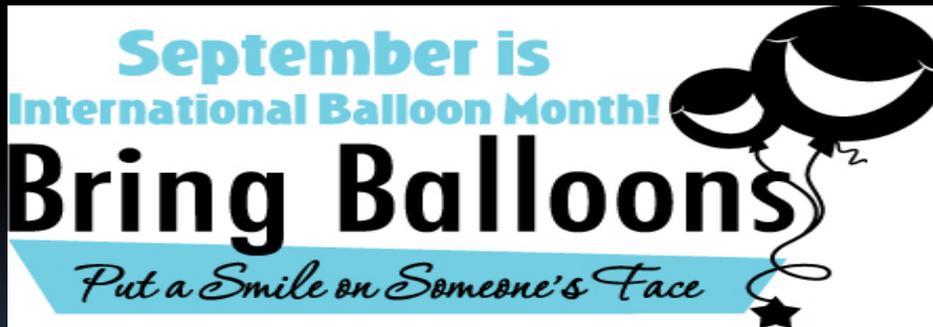


# Balloons as Litter: The Industry

National & International Associations



“Social Expression Products”



Classes, Schools  
and Academies

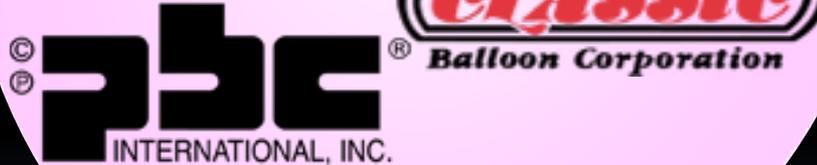


# Balloons as Litter: The Industry

Balloon  
Manufacturers  
and Suppliers

Ribbons, weights,  
inserts, etc  
manufacturers  
and suppliers

Balloon  
time



Helium  
products  
and suppliers



# Balloons as Litter: An Emotional Subject



A Palestinian woman prepares to release a bunch of balloons with foreign peace activists,... during a Nakba rally in the West Bank town of al-Ram, on the outskirts of Jerusalem. (ABBAS MOMANI/AFP/Getty Images)

# Balloons as Litter: An Emotional Subject



# Balloons as Litter: Offering Alternatives

Plant a Tree

Plant a Butterfly Garden

Blow Bubbles

Use streamers or pinwheels

Don't use helium

Mass Balloon Pop

Indoor balloon release

Candle light vigil

Release a rehabilitated bird (work with  
local wildlife rehabilitators)

Dedicate a park bench



# Balloons as Litter: Offering Alternatives

## ***Sky Lanterns are not a safe alternative!***

Most are made of thin paper wrapped around a wire or bamboo frame. When an attached candle or other heat source warms the air inside, they rise and float away.

- Cause fires, burns
- Can entangle animals
- Animals ingest the left over metal
- Can be mistaken for coastal distress flares
- (and are illegal in several states including Virginia)



# Balloons as Litter: Environmental Responsibility



All photos taken by VAQS



# Balloons as Litter: Balloon Release Laws

## State - Legislative History

Balloon release bans were passed at the state level in several states including:

- Connecticut (1990)\* (10 or more)
- Florida (1990)\* (10 or more)
- Tennessee (1990)\* (25 or more)
- California (1990) (foil only)\*
- Virginia (1991) (50 or more)

\*Before the Balloon Council (TBC) was formed



# Balloons as Litter: Balloon Release Laws

*Since its inception, TBC has been successful in defeating restrictions in:*

- California (2008)
- Hawaii
- Maryland (defeated in 2007)
- Massachusetts (bill currently pending)
- New Hampshire (defeated in 2007)
- New Jersey
- New York (bill currently pending) (25 or more)
- Pennsylvania
- Washington
- Wisconsin

# Balloons as Litter: Virginia Law

§ 29.1-556.1. Release of certain balloons prohibited; civil penalty.

- Within a one-hour period fifty or more balloons
- That are made of a nonbiodegradable or nonphotodegradable material or any material which requires more than five minutes' contact with air or water to degrade
- Inflated with a substance which is lighter than air.



Flickr user paulasli



Ourlonghaul blog



[Bryan Hanks](#) Kinston.com

# Balloons as Litter: Helium Shortage

## What is helium used for besides balloons?

*Helium "is inert and has extreme melting and boiling points"*

- Medical Equipment (MRI)
- Scientific (Cryogenics)
- Construction (Arc welders)

## Why is there a helium shortage?

In the essence of time: Google It!

# Balloons as Litter: Where Do We Go From Here?

1. Alliance for Balloon Education
2. Virginia Aquarium and Clean Virginia Waterways partner to study balloon litter in Virginia.



# Alliance for Balloon Education

The Alliance for Balloon Education's (ABE) mission is to prevent the mass releases of balloons, and prevent balloons and their attachments from entering the environment by providing education, alternatives and resources.



[www.AllianceforBalloonEducation.org](http://www.AllianceforBalloonEducation.org)

1. Create a White Paper
2. Create a Website
  1. Information
  2. Resources
  3. Images
  4. Success Stories
  5. Pledges
  6. Action Items
  7. Social Media
3. Recruit Members
  1. Businesses
  2. Non-Profits
  3. Clubs
  4. Groups
  5. Anyone

# Virginia Litter Study

- Clean Virginia Waterways and Virginia Aquarium collaborate to study balloon litter for 2 years
- Created a datasheet and online form for data entry
- Advertised to people and organizations in Virginia who spend time in the field
- Request balloon and attachment types, balloon status (burst or deflated), locations, business names, colors and photos.

## Data Card for Balloon & Attachments Litter

Please help Clean Virginia Waterways and the Virginia Aquarium & Marine Science Center collect data about balloons as litter.



Geographic scope of study: Virginia only.

Period of study: Two years: April 22, 2012 through April 22, 2014.

Instructions: Whenever you find a littered balloon or a balloon ribbon in Virginia, please fill out this form & send it to CVW. Or send this information in an email to [cleanva@longwood.edu](mailto:cleanva@longwood.edu) and write "balloon litter data" in the subject line. You can also report online at [sites.google.com/site/virginiaballoonestudy](http://sites.google.com/site/virginiaballoonestudy)



VIRGINIA  
AQUARIUM  
A MARINE SCIENCE CENTER

Date of observation \_\_\_\_\_

Location (Name of place and latitude and longitude if possible) \_\_\_\_\_

Your name, email & phone number (Will be used ONLY if CVW has questions)

Please mark balloon descriptions as you find them then total up below.

Latex, deflated with	string _____	plastic piece _____
Latex, deflated no attach	_____	_____
Latex, burst with attachment	string _____	plastic piece _____
Latex, burst no attachment	_____	_____
Latex, with writing	_____	_____
Foil, deflated with	string _____	plastic piece _____
Foil, deflated no attachment	_____	_____
Foil, burst with attachment	string _____	plastic piece _____
Foil, burst no attachment	_____	_____
Foil, with writing	_____	_____

	Number of balloons found	Plastic ribbons attached? Yes or no	Non-plastic string attached? Yes or no	Plastic disk or valve attached? Yes or no	Other attachments? Yes or no (describe below)	Writing on balloons? Yes or no	Burst? Yes or no	Color of balloon(s) (if more than two describe below)	Where found? (On beach? Near river? On a farm?)
Latex Balloons		Y- N-	Y- N-	Y- N-	Y- N-	Y- N-	Y- N-		
Foil * Balloons		Y- N-	Y- N-	Y- N-	Y- N-	Y- N-	Y- N-		

\* Foil balloons are made of "metabond" nylon film, and are also called "Mylar." Mylar is trademarked by DuPont Teijin Films and is made of heat Polyethylene Terephthalate (PET), a thin polyester plastic.

Did you take photos that you are willing to share? Yes \_\_\_ No \_\_\_ (please email with datasheet)

If there was writing on the balloons, what was the writing? \_\_\_\_\_

Animal entanglement or ingestion evidence? Please explain. \_\_\_\_\_

Anything else you want to share about balloon litter: \_\_\_\_\_

Other Comments: \_\_\_\_\_

Mail this Data Card to: Clean Virginia Waterways, Longwood University, 201 High Street, Farmville, VA 23909 or scan and email it to [cleanva@longwood.edu](mailto:cleanva@longwood.edu). Photos are appreciated. Thank you for your help in collecting data.

For more information about balloons as litter, including the difference between latex and foil balloons, please visit [www.longwood.edu/cleanva/balloons.htm](http://www.longwood.edu/cleanva/balloons.htm)

# Virginia Litter Study

Single Balloon Report

If you have found a single balloon, please choose one of the forms below, based on the type of balloon that you have found.

Fill out this form if you have found a latex balloon



Fill out this form if you have found a foil balloon



**Latex Balloon**

If you have found a latex balloon, please fill out the following form and check the option which best describes the latex balloon that you found.  
*\* Required*

**Name \***

**Email \***

**Phone Number**  
We will only call regarding this form if necessary

**Date \***  
Please enter the date in which you found the balloon

**Location \***  
Please give a detailed description of where you found the balloon, include a gps location if possible. Also, please describe type of area, ie. stream, beach, woods, etc.

**Foil Balloon**

If you have found a foil balloon, please fill out the following form and check the option which best describes the foil balloon that you found.  
*\* Required*

**Name \***

**Email \***

**Phone Number**  
We will only call regarding this form if necessary

**Date \***  
Please enter the date in which you found the balloon

**Location \***  
Please give a detailed description of where you found the balloon. Also include if found on a waterway, in a tree, etc.

9:38 AM  
2/25/2013

# Virginia Litter Study

## Interesting finds:

Foil vs. Latex

Latex : 323 (39%)

Foil: 500 (61%)

Attachments

479 had no attachments (58%)

Burst vs deflated

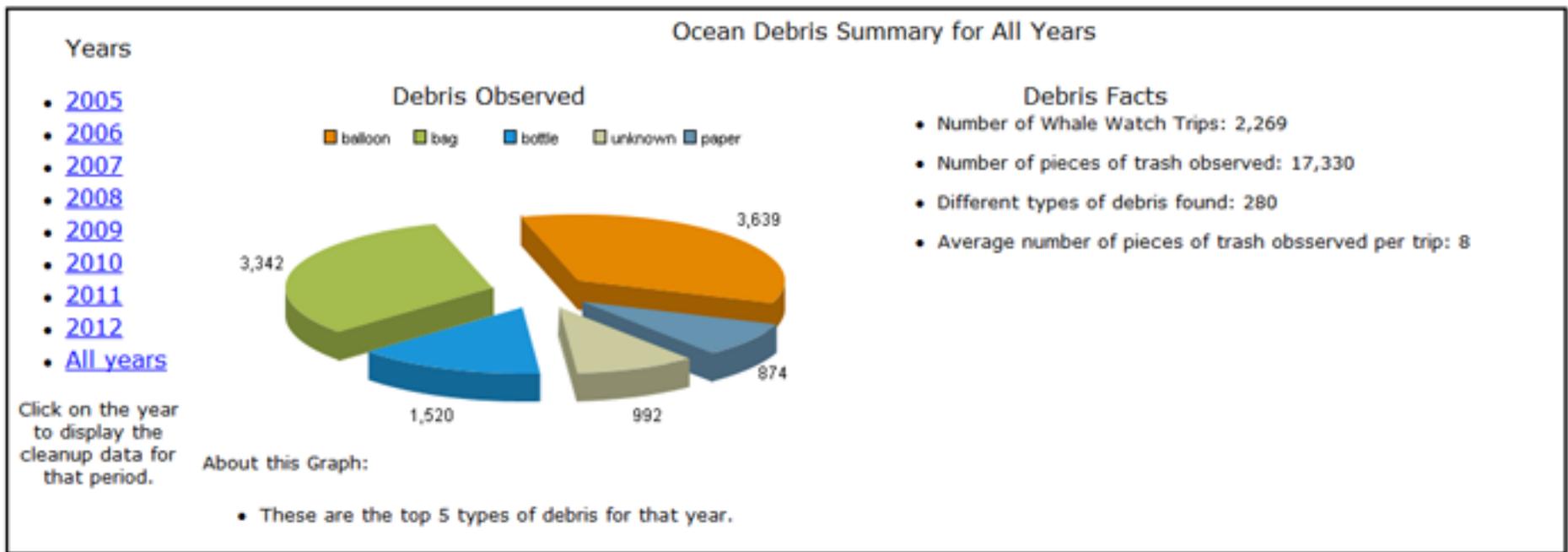
Latex burst with no attachment: 26 (8%)

Latex deflated with no attachment: 144 (45%)

(Total Latex Balloons: 323)

Industry claims that latex balloons burst into fragments when released

# Virginia Litter Study (future?)



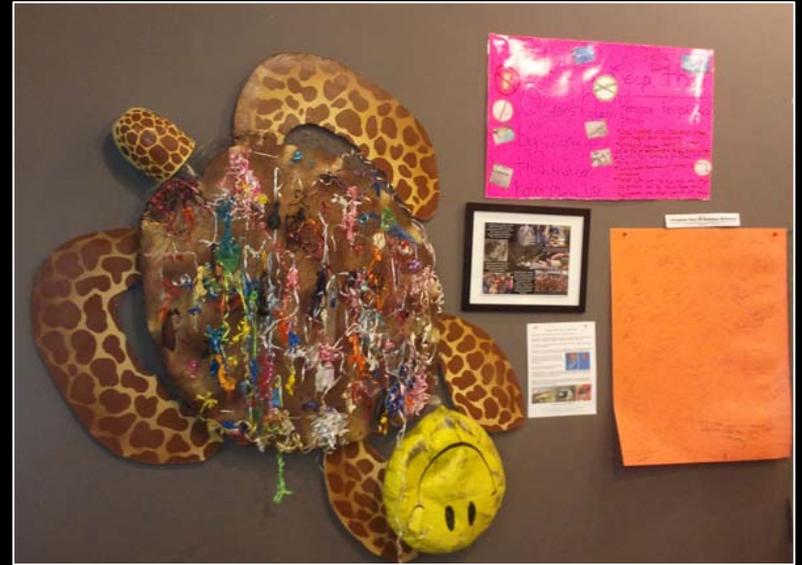
This study is funded by NH Sea Grant and through a grant from the NOAA Marine Debris Program.  
Site design and hosting by the University of New Hampshire Cooperative Extension.



UNIVERSITY of NEW HAMPSHIRE  
COOPERATIVE EXTENSION



# Balloons as <sup>^</sup>Litter: Innovate, Educate *not*



# Balloons as Litter: Questions?

facebook  Search for people, places and things

Write something...

---

 **New Years Red Balloon Release Party**  
December 31, 2012 via mobile 

Due to rain I will not be flying my balloons tonight :( maybe it will clear up

Like · Comment · Share

---

 **Leonardo A Matos Ramirez** Good! You should not be littering our lands with plastic! Save them for a birthday and dispose of properly!  
December 31, 2012 at 5:34pm via mobile · Like

---

 **New Years Red Balloon Release Party** Leonardo i will be releasing the balloons tomorrow & an extra one for the comment you made.  
December 31, 2012 at 5:37pm via mobile · Like

---

 **Leonardo A Matos Ramirez** Make sure to put my name on it! ... Prick  
December 31, 2012 at 5:40pm via mobile · Like

---

 **New Years Red Balloon Release Party** Excuse yourself there was no name calling needed.  
December 31, 2012 at 7:43pm via mobile · Like

---

 **Leonardo A Matos Ramirez** Oh put a sock in it. You started by being sarcastically rude. So put your big people pants on and suck it up.  
December 31, 2012 at 8:20pm via mobile · Like

---

 **New Years Red Balloon Release Party** Wow..  
December 31, 2012 at 8:30pm via mobile · Like